

Baseline Study of GRASS Project in Kapuas Hulu, West Kalimantan

Conducted by RASA Consulting



implemented by:



In cooperation with:



MINISTRY OF AGRICULTURE
REPUBLIC OF INDONESIA

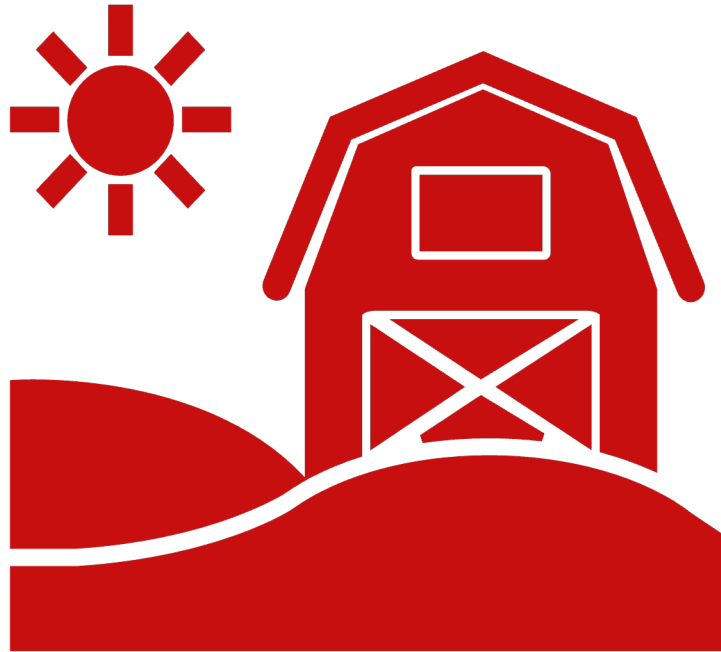


Introduction



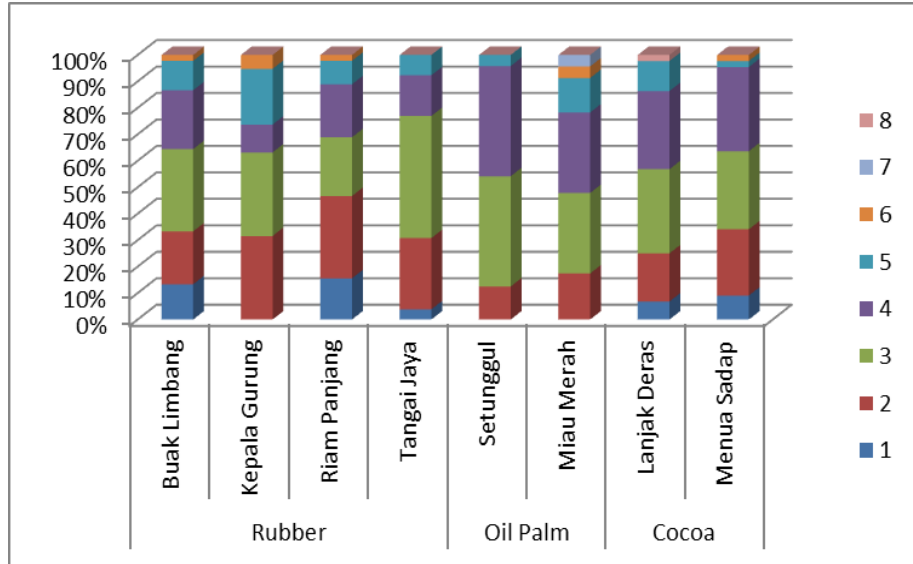
- Targeted villages for baseline study were categorized by good and poor access, considering the road condition and distance to the city Putusibau
- In total there were 270 smallholder respondents from 4 crop typologies; palm oil, rubber, cacao, and coffee. 45 smallholder respondents for each commodity
- Data collection is in July 2023 with combined techniques: household survey, in-depth interview, and FGDs for gender and value chain

Livelihood, Land Use, and Farming System

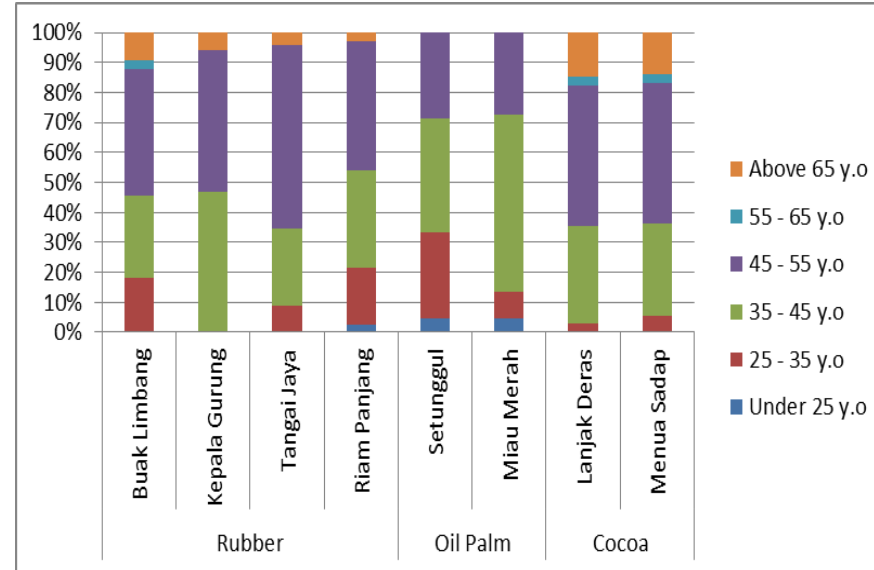


Household demography

Household size respondents in sample village typologies



Household head ages of respondents in sample village typologies

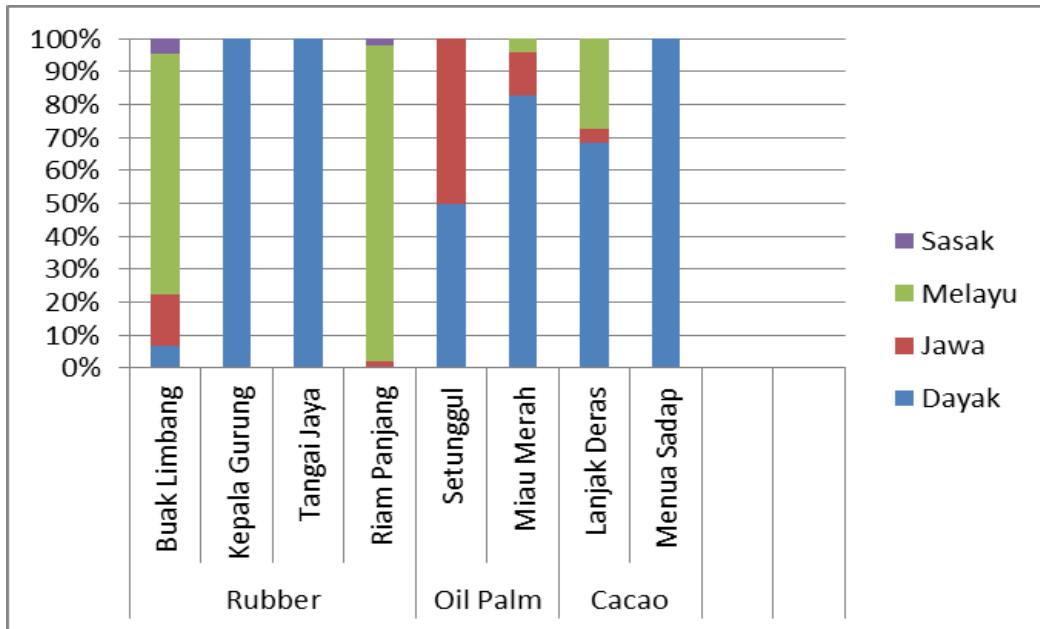


- The range of average household size is 2-3 members for rubber typology, while for oil palm mostly 3-4 members and in cacao too.

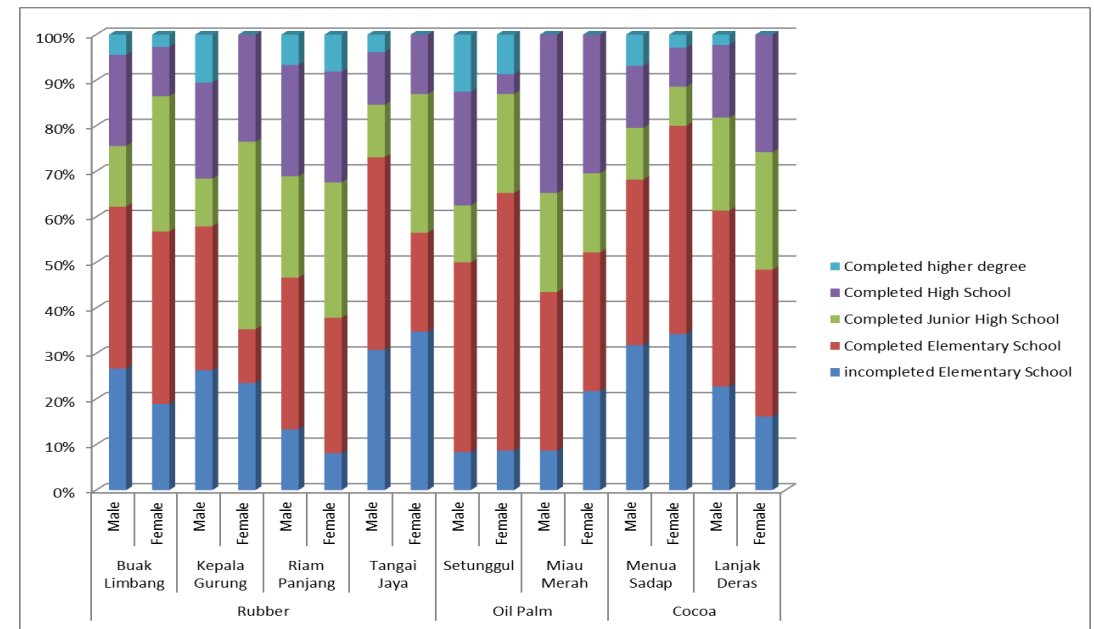
- In the palm oil typology, 30-60% of the age distribution of farmers within the productive range of 35-45 years.
- For the rubber typology, only 20-45% of the age distribution of farmers is within the productive age range.
- while in the cocoa typology, 25-40% of farmers are within the productive age range.

Household demography

Respondents' ethnicity



- In the **oil palm typology**, respondents are predominantly from the **Javanese** and **Dayak** ethnic. In the **rubber typology**, respondents are mainly from the **Malay** and **Dayak** ethnic, while in the **cocoa typology**, the **Dayak** ethnic group dominates with a small Malay representation of Malay and Javanese

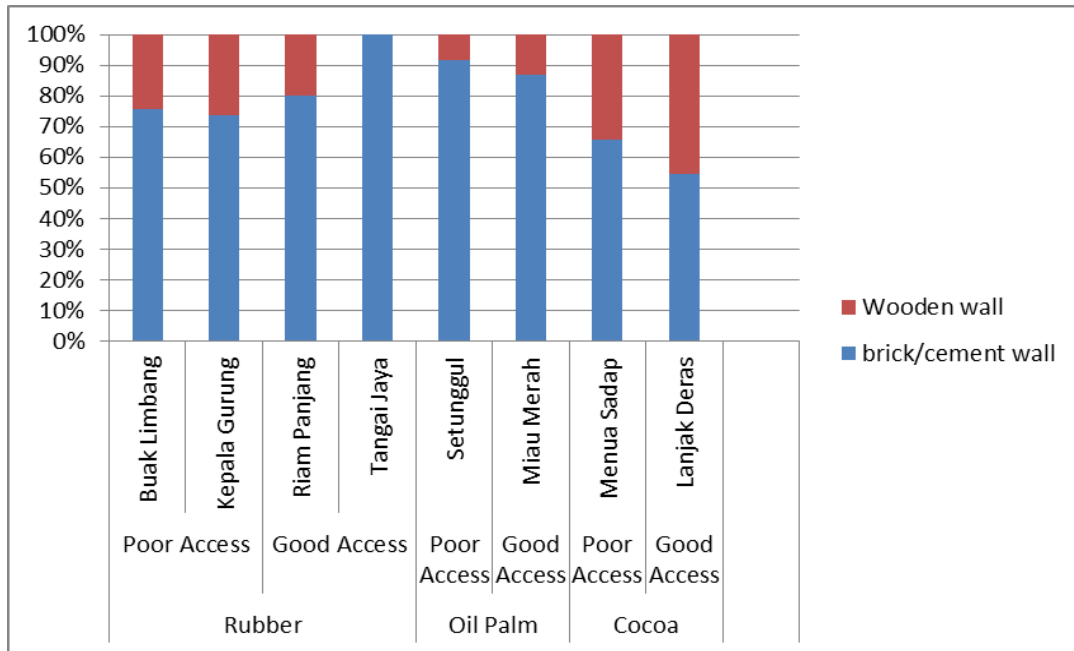


Educational level

- The education level across all typologies is generally limited to junior high school graduates. Farmers in the oil palm typology have a larger percentage of individuals with education up to high school and college completion.

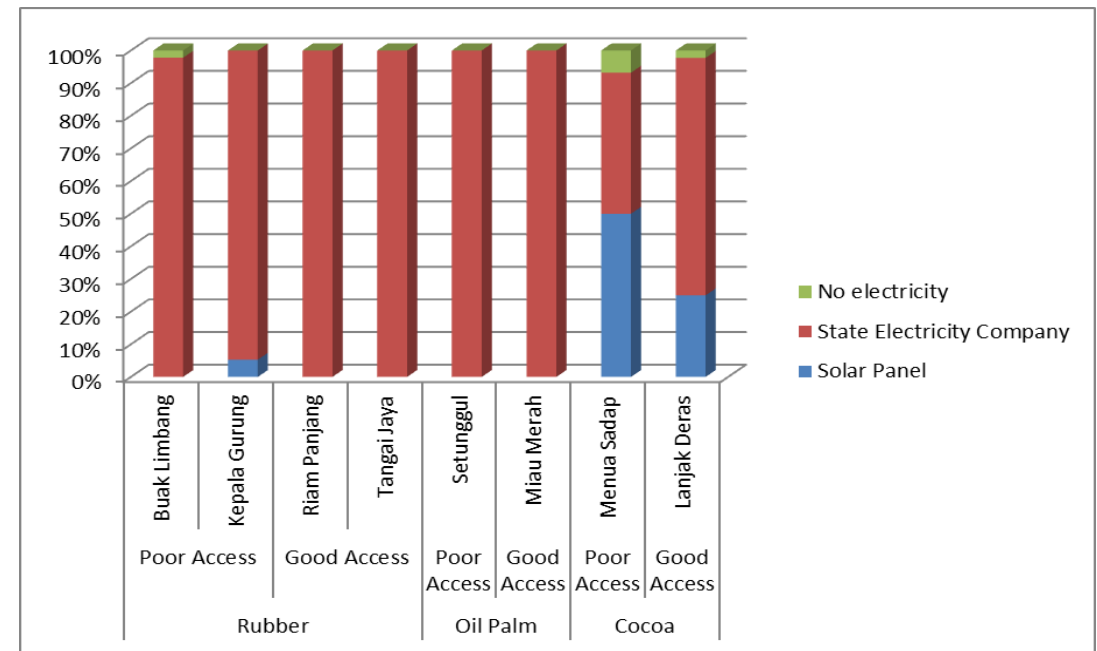
Household demography

House wall condition



- **Over 60%** Households already use bricks or concrete blocks for walls. Farmers in villages with good accessibility typologies generally have a higher percentage of houses with brick walls compared to villages with poor accessibility

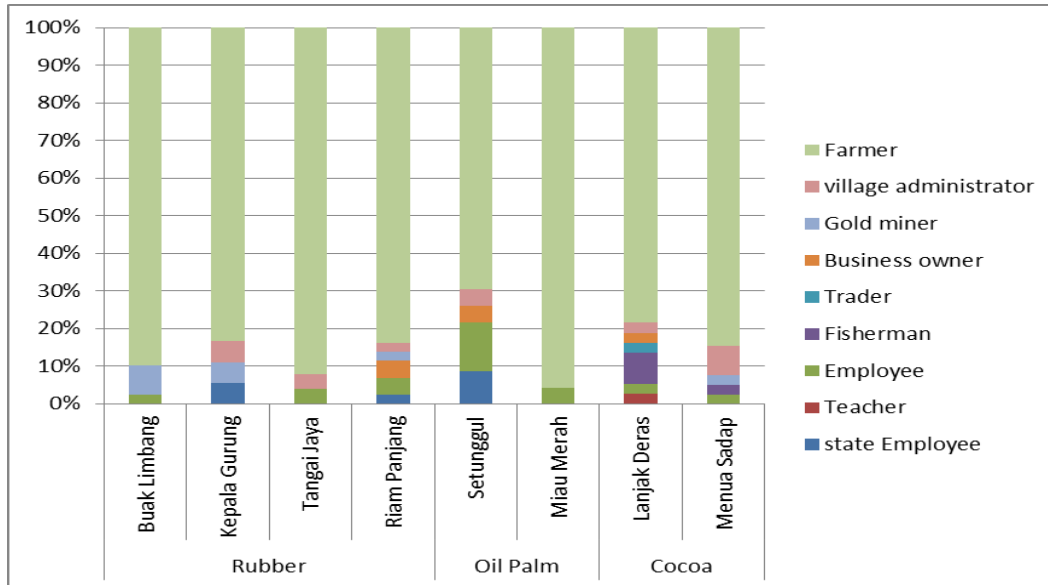
Electricity Source



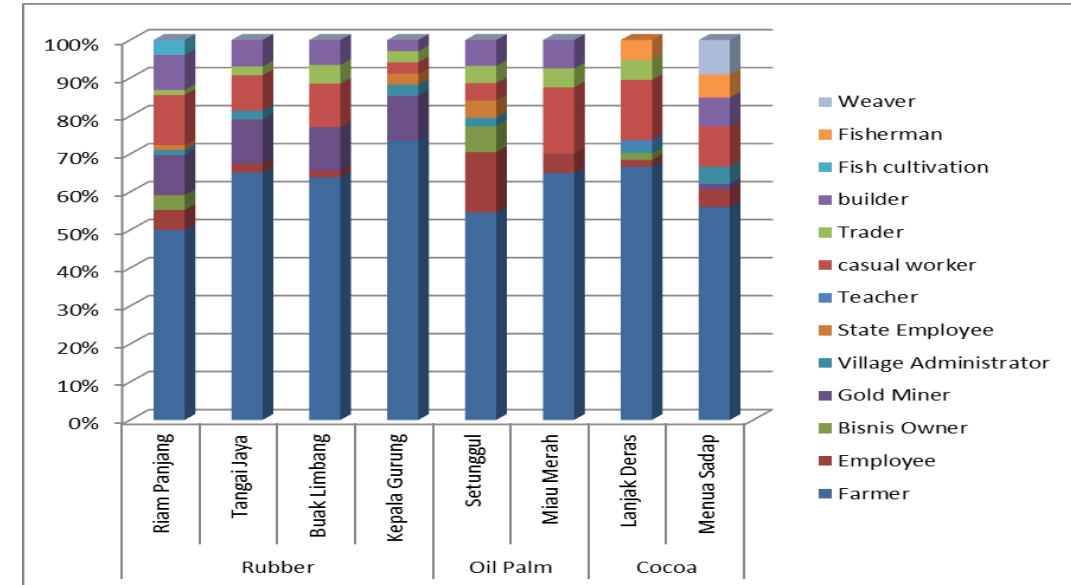
- **The majority of respondents in all typologies already have access to electricity through PLN (state-owned electric company).** Only in the cocoa typology area with poor accessibility, in the village of Manua Sadap, solar panels are used as the electricity source, and a small fraction have access to electricity

Livelihood

Primary Livelihoods



Livelihood Options

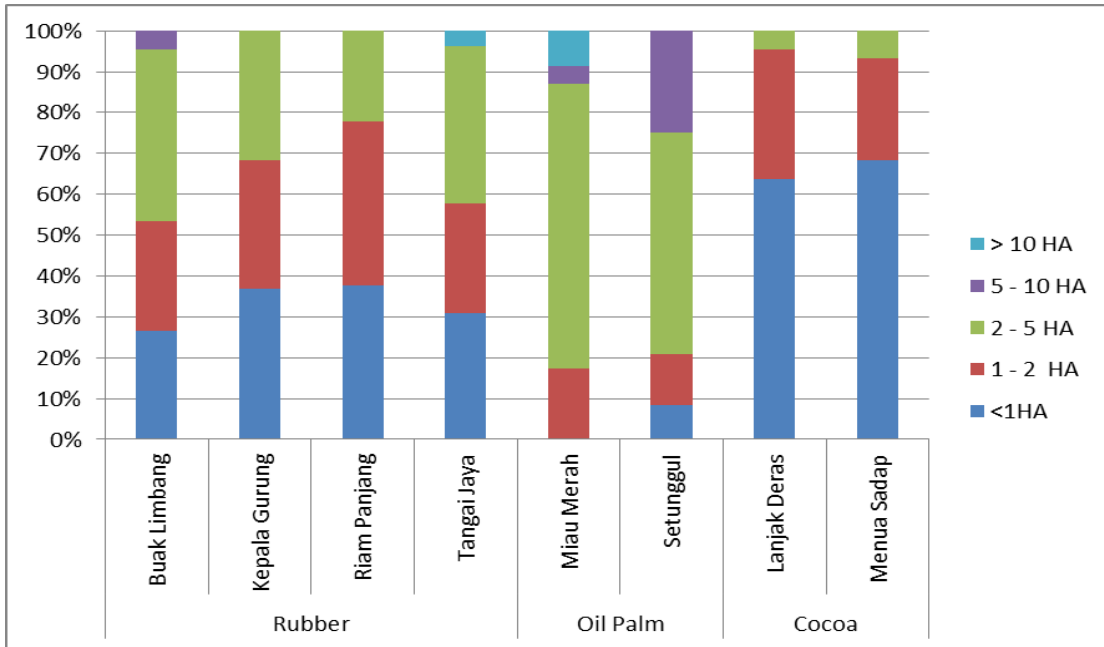


- **Agriculture is the primary source of livelihood**, with an estimated 70% to 90% of the population engaged in the agricultural sector. However, around 10% to 30% of households engage in non-agricultural activities for their livelihoods

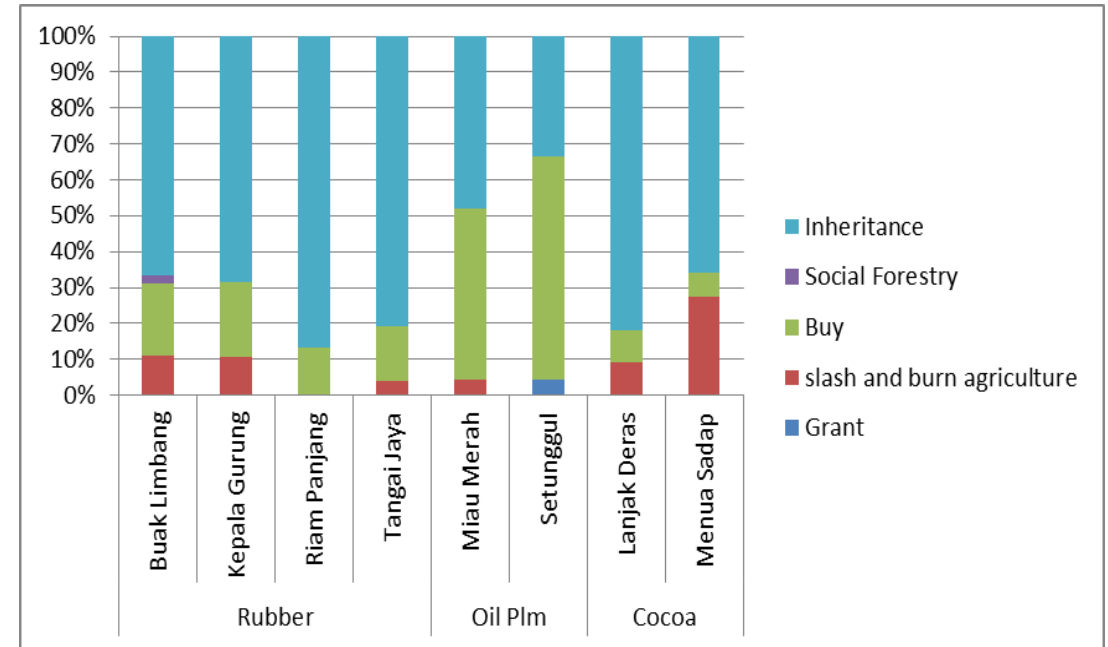
- **Other livelihood options** when farmers are unable to yield results from the agricultural sector include **farm labor, construction work, gold mining, employment, weaving, and trading**. The factors influencing these livelihood choices are the profitability of their farming endeavors. When commodity prices decrease, farmers opt not to produce agricultural outputs as the incurred costs would outweigh the potential gains

Land Use and Land Holding

Land Size



Origin of Land Ownership

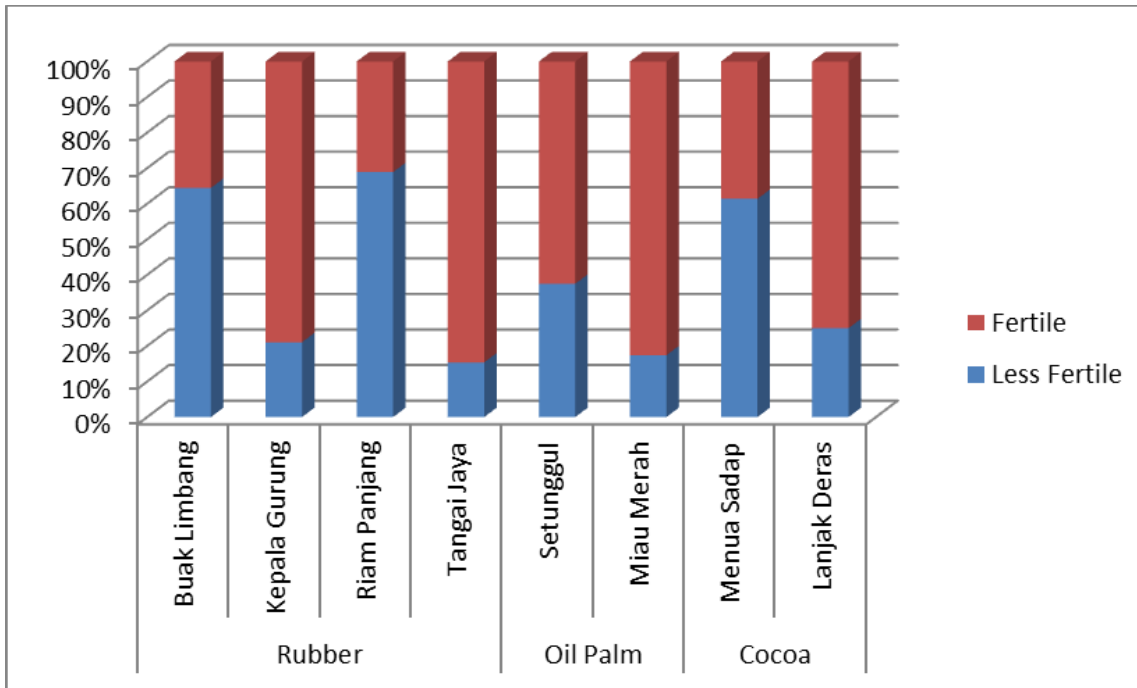


- The land ownership in the palm oil typology is larger compared to the village in the rubber and cocoa typologies. The average land ownership in the palm oil typology is 4 hectares, in the rubber typology it's an average of 2 hectares, and the smallest is the village in the cocoa typology with only 1.1 hectares

- In the village with palm oil typology, more than 37% to 50% come from respondent purchases
- For rubber and cocoa cultivation land, Over 60% of land ownership originates from inheritance.

Land Use and Land Holding

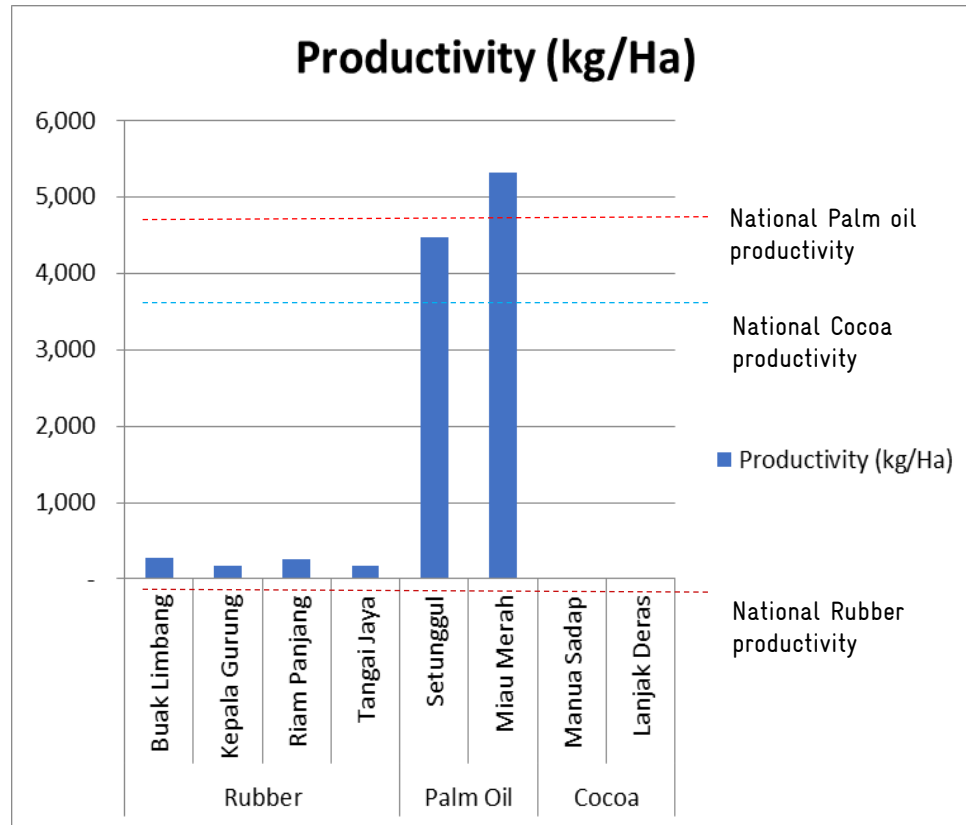
Land fertility Perception



- In rubber typology, respondents categorize soil in Buak Limbang and Riam Panjang is less fertile, contradictive with soil fertility in Kelapa Gurung
- In Oil palm typology, respondents perceived that >60% of their land is fertile in Setunggul, and Miau merah
- In Cocoa typology, respondents in Menua sadap consider their land is less fertile (60%), while in Lanjak deras, 70% respondents categorized their land is fertile.

Land Productivity

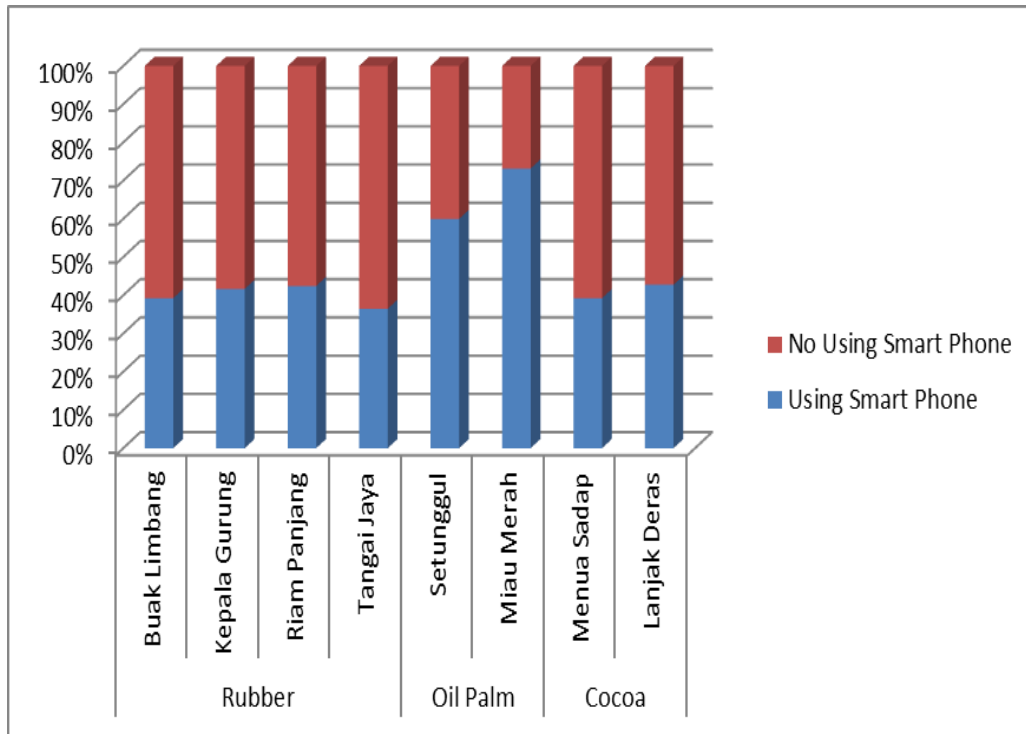
Land Productivity Across All Sample Village Typologies



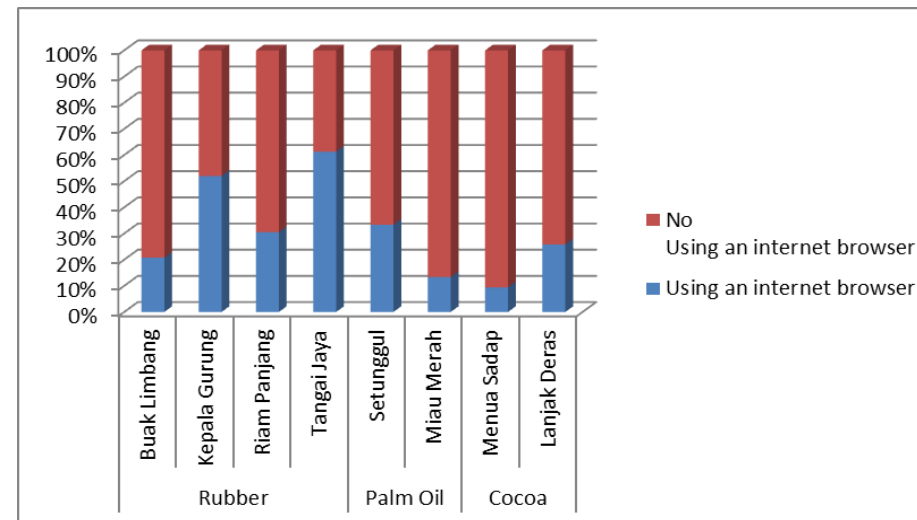
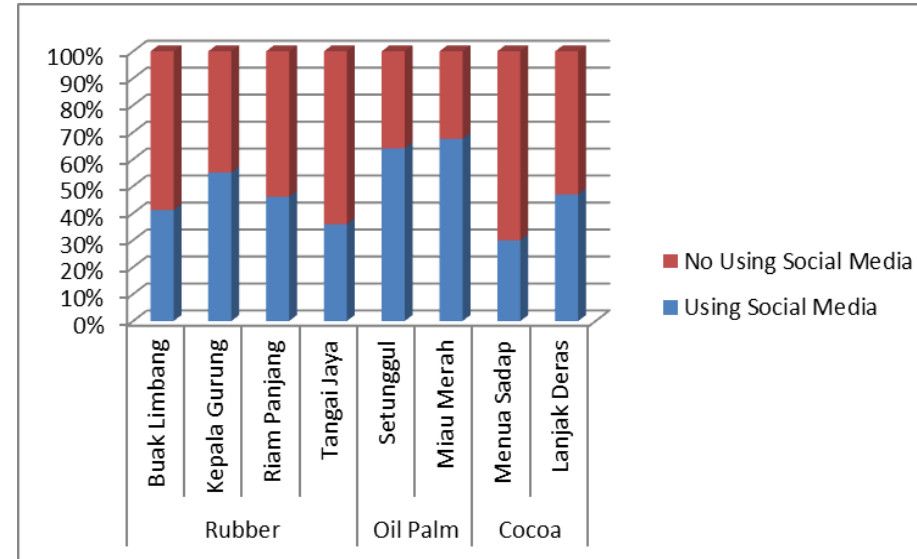
Regarding the benchmark from national productivity, all village rubber is remain low. In palm oil sample, the poductivity is near the national level. No data available for cocoa villages

Information and Knowledge

Smartphone Use of Respondents Across All Sample Village Typologies



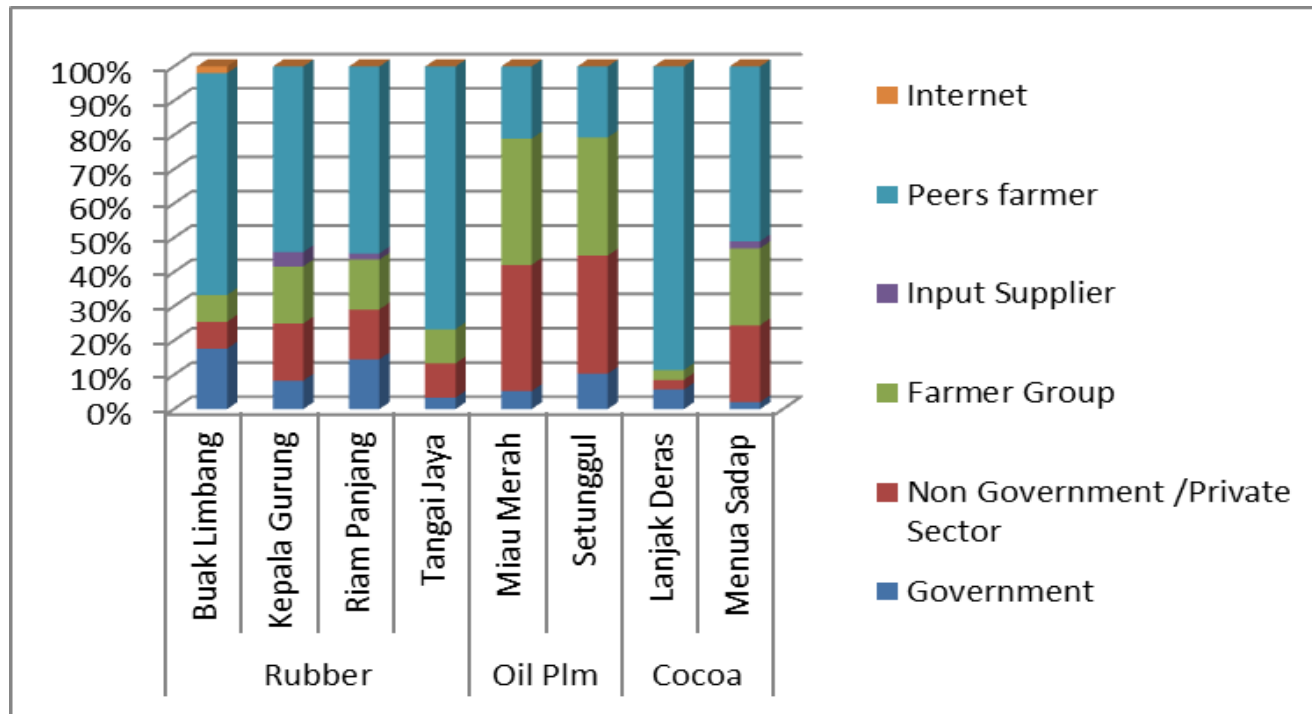
- Between 60% to 70% of respondents in the palm oil village typology have been using smartphones. Meanwhile, smartphone usage among respondents in the rubber and cocoa village typologies is still below 50%.



The use of social media and search applications is higher among respondents in the palm oil typology compared to respondents in the rubber and cocoa typologies

Information and Knowledge

Information Sources for Cultivating Main Commodities of Respondents Across All Sample Village Typologies



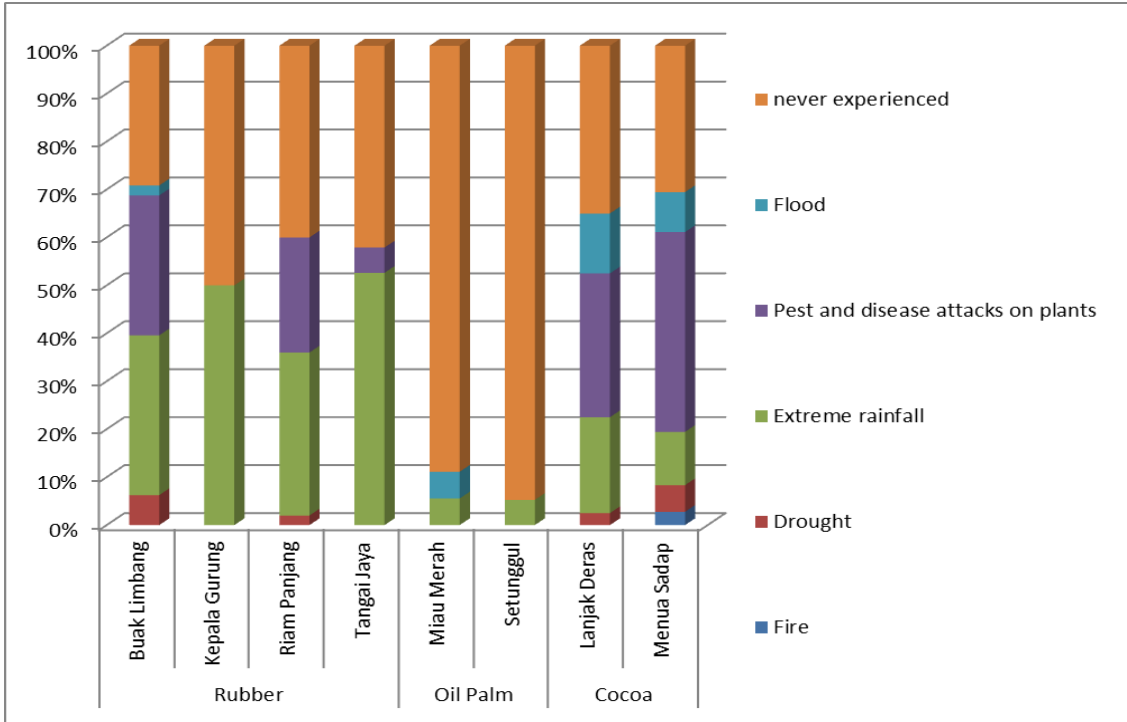
- Respondents in villages with the palm oil typology, 80% acquire cultivation information from group meetings, non-governmental organizations, and company sources. Meanwhile, in the rubber and cocoa typologies, 60% to 90% of the information about cultivating main commodities comes from other farmers.

Information and Knowledge

Typology	Oil Palm	Rubber	Cocoa
Digital Tools	E-learning, Traceability system, short video.	E-learning, short video	E-learning, short video
E-learning Module	<ul style="list-style-type: none"> • GAP • introduce organic fertilizer to reduce the usage of chemical fertilizer • Regular Price information 	<ul style="list-style-type: none"> • GAP • Knowledge of plant pests and diseases • application of intercrops such as rhizome plants for additional income • Knowledge of climate and weather conditions • Regular Price information 	<ul style="list-style-type: none"> • knowledge about cocoa cultivation business opportunities • agroforestry cocoa cultivation techniques • choosing the right shade plants with high economic value • Regular Price information
Other information and knowledge source	<ul style="list-style-type: none"> • local radio • SMS blast 	<ul style="list-style-type: none"> • Local radio • SMS Blast 	<ul style="list-style-type: none"> • Local radio • SMS Blast

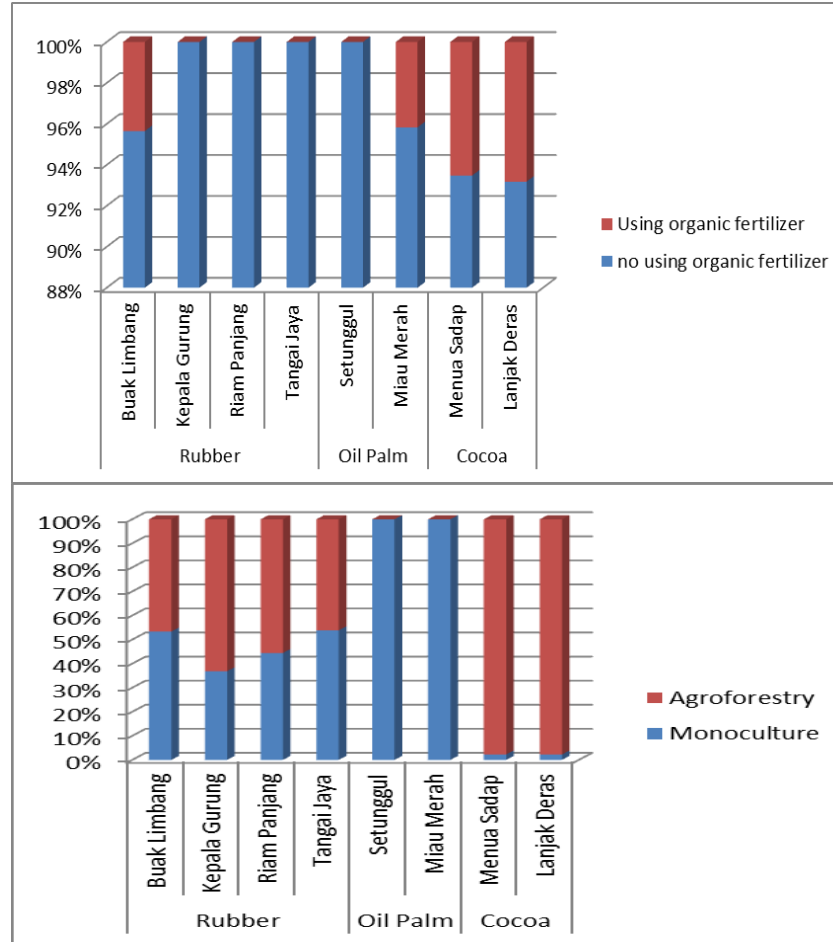
Livelihood Resilience

Respondents' Perception of Significant Events Affecting Livelihoods Across All Sample Villages



The vulnerability of livelihoods can be observed through significant events that are currently affecting farmers' livelihoods. According to respondents' perceptions, important events they have experienced over the past 10 years include extreme rainfall, pest and disease outbreaks, drought, fires, and floods

Usage of Organic fertilizer and agroforestry



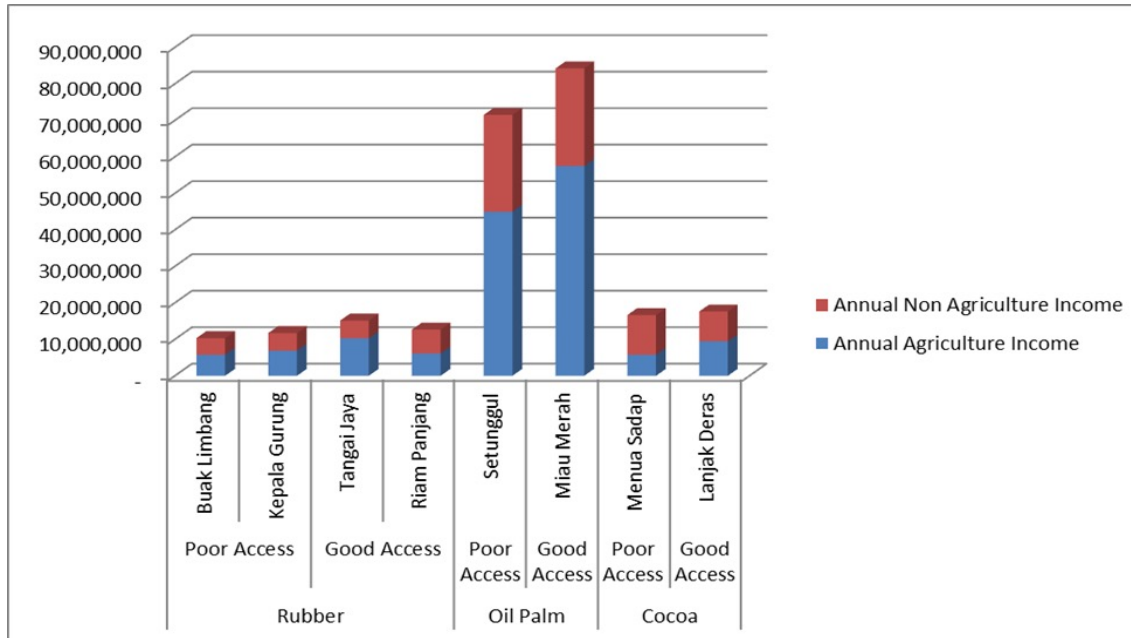
Smart Agriculture can be observed through the usage of organic fertilizer applying agroforestry

The usage of organic fertilizer is very low , under 7 % in all typology .

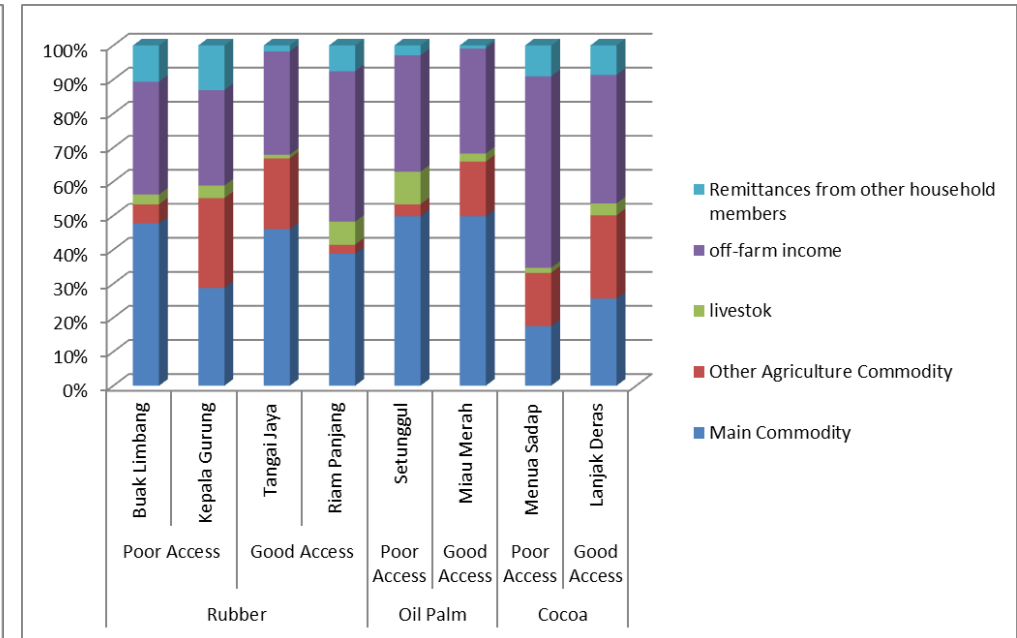
only the typology of oil palm does not use agroforestry. 50% of rubber typology is agroforestry and almost 100% cocoa typology is agroforestry

Income and Line of Poverty

Income Sources of Respondents Across All Sample Village Typologies



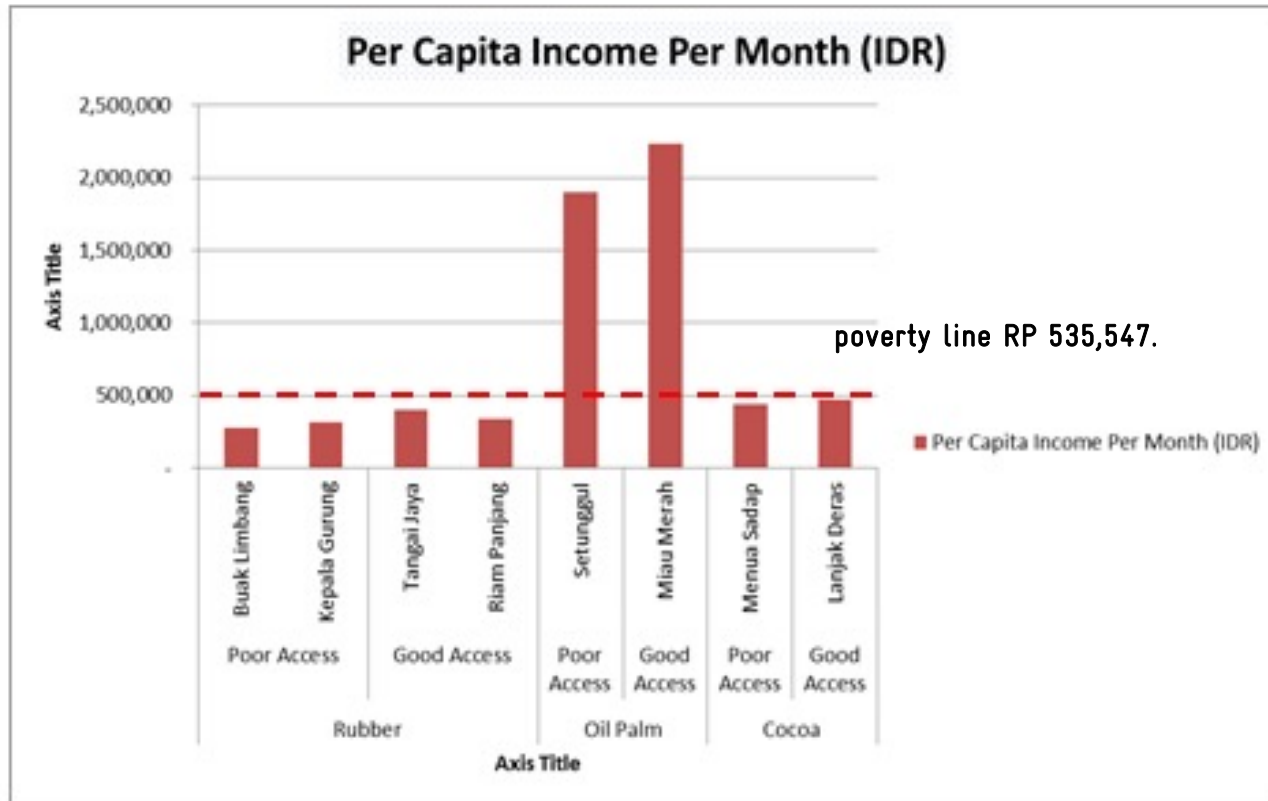
Source Of income



- In villages with the palm oil typology, 50% of the income source comes from the main commodity, which is palm oil. For villages with the rubber typology, 30% to 50% of the income source comes from the main commodity, rubber. Conversely, in villages with the cocoa typology, the main income source doesn't come from the main commodity cocoa. According to the farmers, 75% to 80% of the income comes from non-agricultural sources and other agricultural activities.

Income and Line of Poverty

Per Capita Income Per Month of Respondents Across All Sample Village Typologies



- The average total annual household income in villages with the palm oil typology is higher
- Using the Indonesian poverty standard according to BPS of Rp. 535,547 per month per capita, only respondents in the palm oil typology are above the poverty line, while respondents in the rubber and cocoa typologies are below the poverty line.

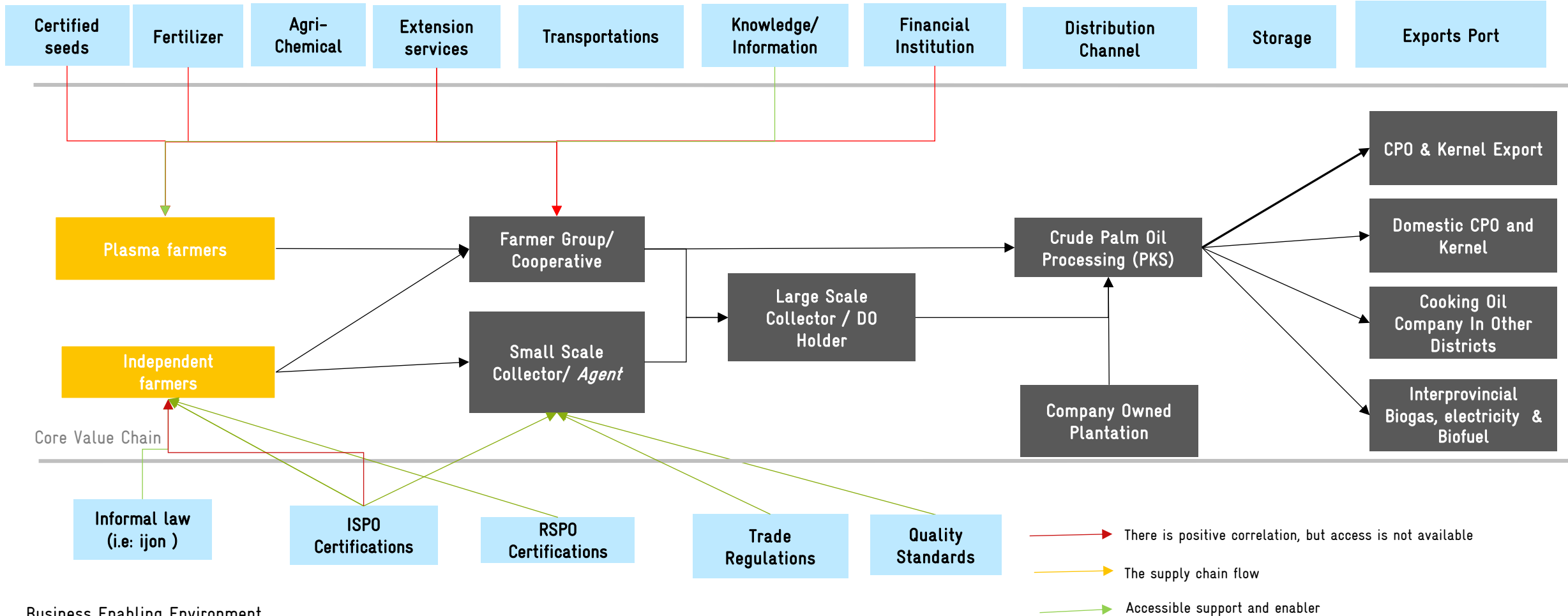


Value Chain and Market Analysis



MARKET MAP OF OIL PALM IN KAPUAS HULU

Supporting Services



Business Enabling Environment

- Supporting factors required by stakeholders along the value chain include quality seeds, fertilizers, agricultural inputs, advisory services, transportation, information and knowledge, financial institutions, distribution channels, warehouses, and ports.
- Enabling factors that have been identified include ISPO and RSPO certification, trade regulations, and quality standards.

Marketing Channel I (Plasma Farmer)

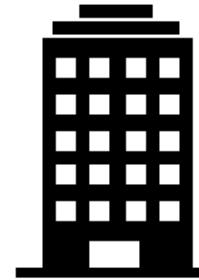
Plasma Farmer



Cooperative Asmoja I



CPO Processing (PT
RAP) at Setunggul

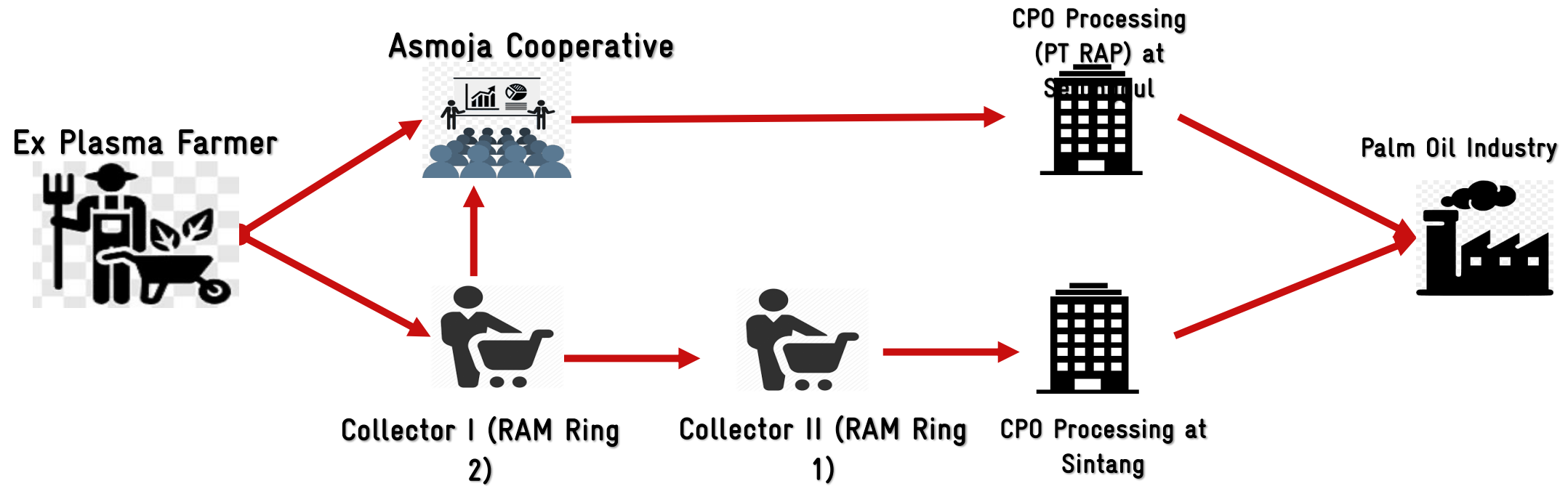


Palm Oil Industry



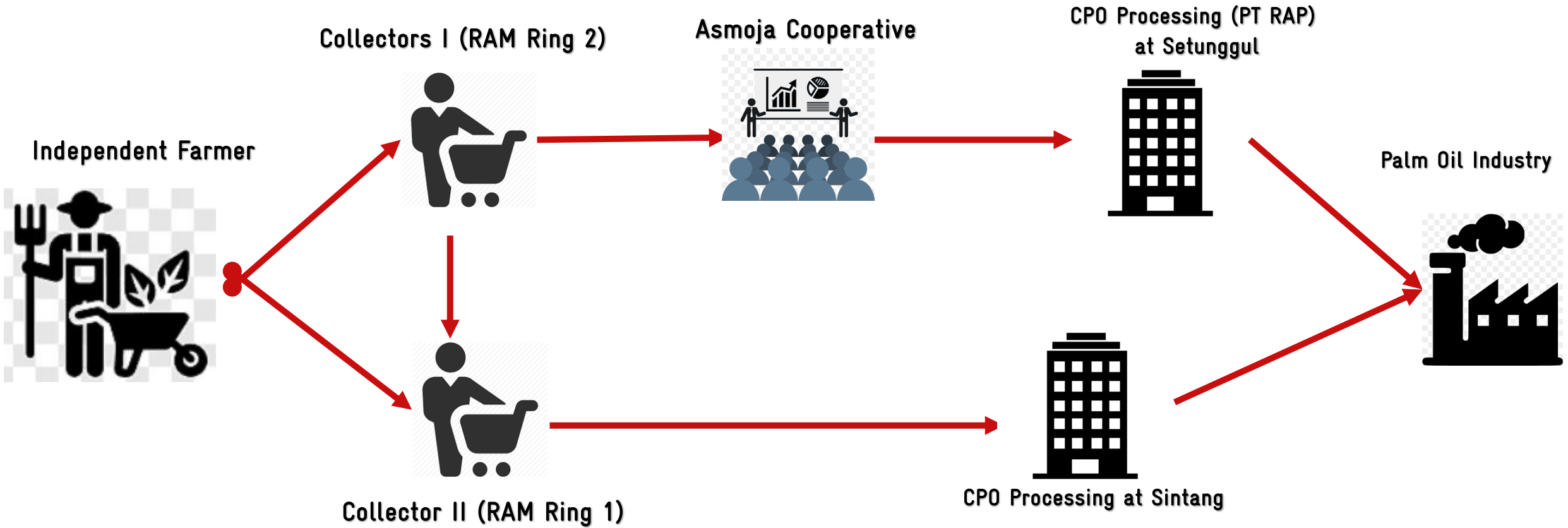
- Plasma farmers are partner farmers of PT Riau Agrotama Plantation (RAP), and they are organized under the Asmodja 1 cooperative, which is established by ("owned by") PT RAP.
- This program involves a collaboration between core plantations and plasma plantations with communities that own land around the core area of PT RAP. All palm oil cultivation is managed according to the company's standards through the Asmodja 1 Cooperative.

Marketing Channel II (ex-Plasma Farmer)



- Ex-plasma farmers are former plasma farmers whose collaboration period with the company has ended, and they have started managing their palm oil independently.
- They are still members of a cooperative that allows them access to selling Fresh Fruit Bunches (FFB). Ex-plasma farmers have the option to sell FFB through collector traders if the offered price is better.
- Collector traders have FFB marketing access through cooperatives or they can directly place orders with FFB processing companies located outside the regency.

Marketing Channel III (Independent Farmer)



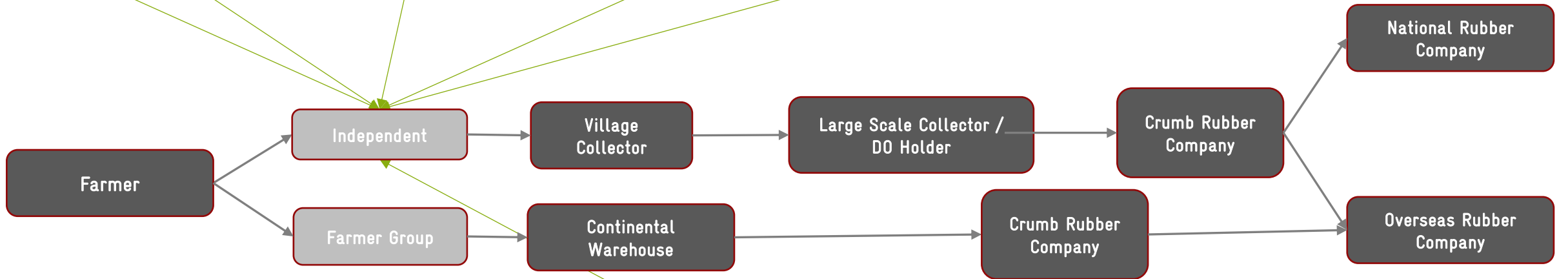
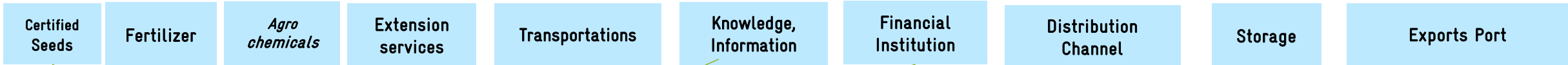
- Independent farmers market their Fresh Fruit Bunches (FFB) through collector traders at the sub-district and regency levels.
- Independent farmers do not have access to cooperatives. Their dependence on collector traders results in a lack of competitiveness for independent farmers, who merely receive the offered FFB prices.
- Collector traders' market FFB both through cooperatives and directly to FFB processing mills because they have direct orders from FFB processing mills located outside the regency

Business Case and Intervention in Oil Palm

Problem	Main Cause	Service and required conditions	Area Intervention	Partners and Stakeholders
The productivity of farmers in the Palm Oil industry is low	Suboptimal agricultural practices	Provision of Extension Services	Integrated approach to good agricultural practices and partnership of stakeholders	Plantation Department GAPKI NGO Processing Factory FFB Farmer groups
	Low access to inputs	Access to agricultural inputs		BUMDES SAPRODI market
	Poor quality seedlings	Access to good quality seeds		Plantation Department Large Palm Oil Plantations Ministry of Agriculture
The selling price of independent farmers has not been optimal	Weak bargaining position of independent farmers	Access to markets		Farmer Groups Cooperatives Processing Factor FFB
	The quality of crude palm oil (FFB) extraction has not been optimal	Access to good quality seeds		Plantation Department Large Palm Oil Plantations Ministry of Agriculture

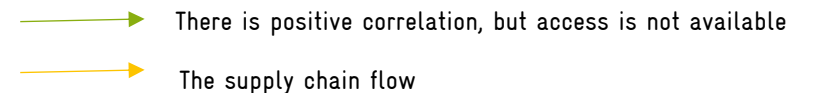
MARKET MAP OF RUBBER IN KAPUAS HULU

Supporting Services



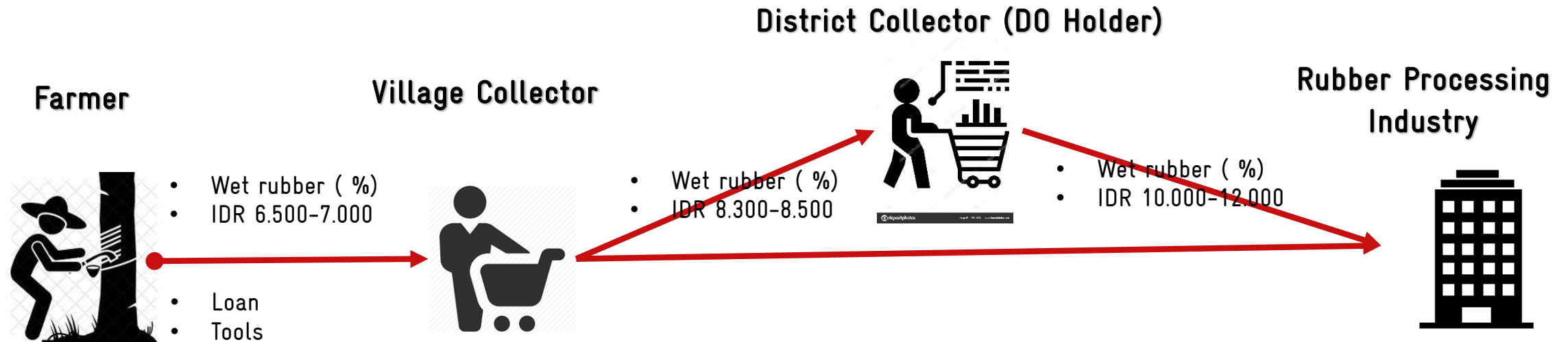
Core Value Chain

Business Enabling Environment



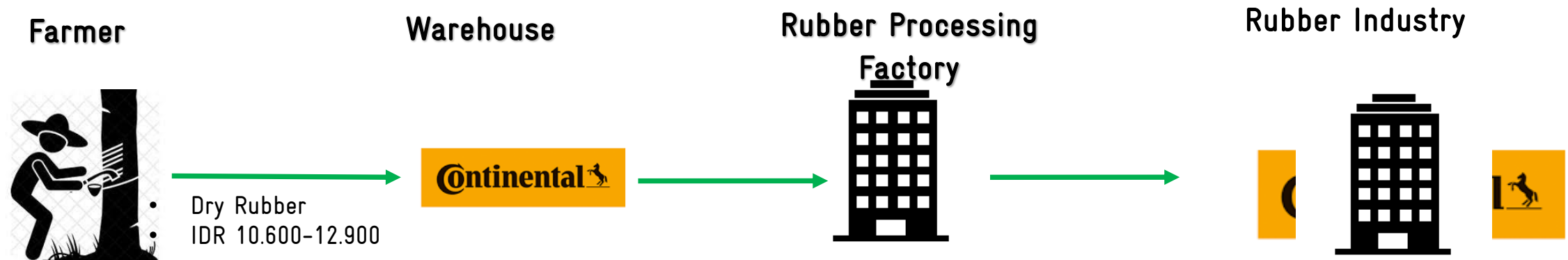
- Value chain actor in the existing rubber market within the study area include farmers/farmer groups, village collectors, continental warehouses, large collectors, and raw rubber processing factories.
- supporting service along the value chain for rubber include quality seeds, fertilizers, agricultural inputs, advisory services, transportation, information and knowledge, financial institutions, distribution channels, warehouses, and ports
- enabling factors include unwritten agreements between collectors and farmers, trade regulations, and quality standards

Rubber Marketing Channel I (independent Farmer)



- Independent farmers sell wet rubber through village and sub-district level collectors. These self-reliant farmers do not have the access to form groups for sales
- Collector traders' sell wet rubber to major collectors who hold orders or have direct orders to Rubber processing factories in the district.

Rubber Marketing Channel I (Farmer Group)

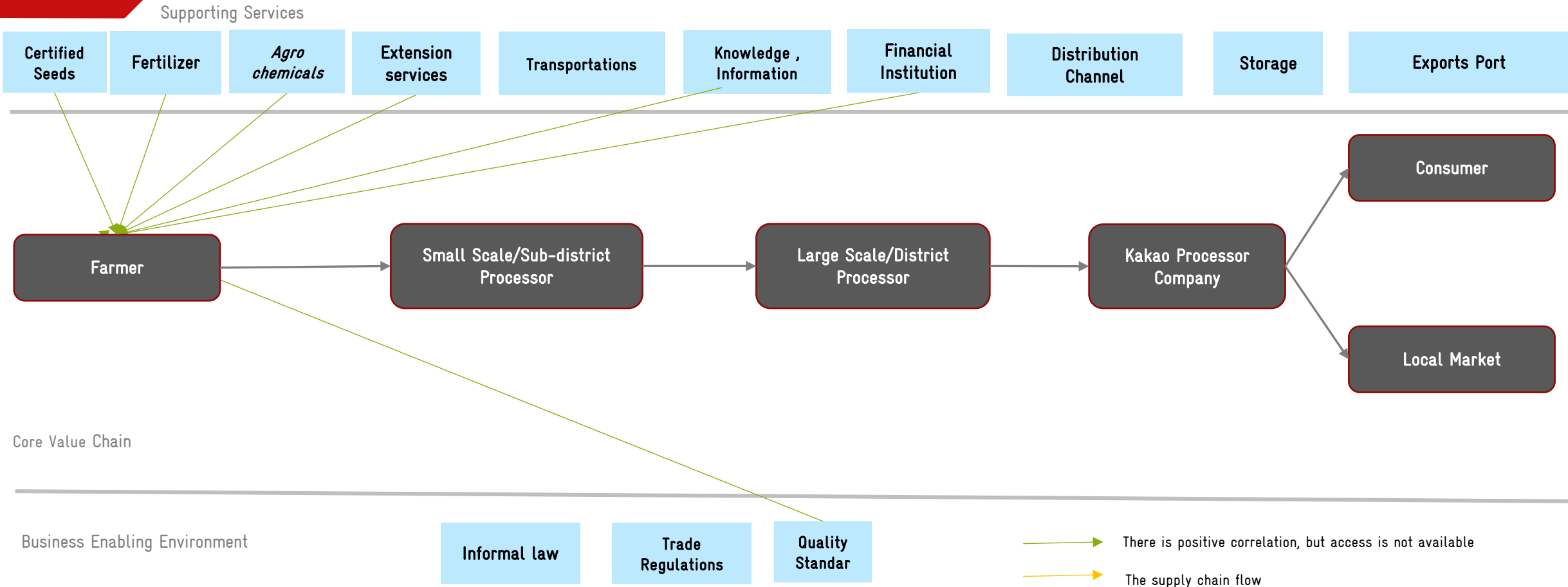


- Assisted farmers already have group access and can sell dried rubber to GIZ Warehouses. The streamlined marketing channel and maintained rubber quality ensure that farmers receive better prices

Business Case and Intervention in Rubber

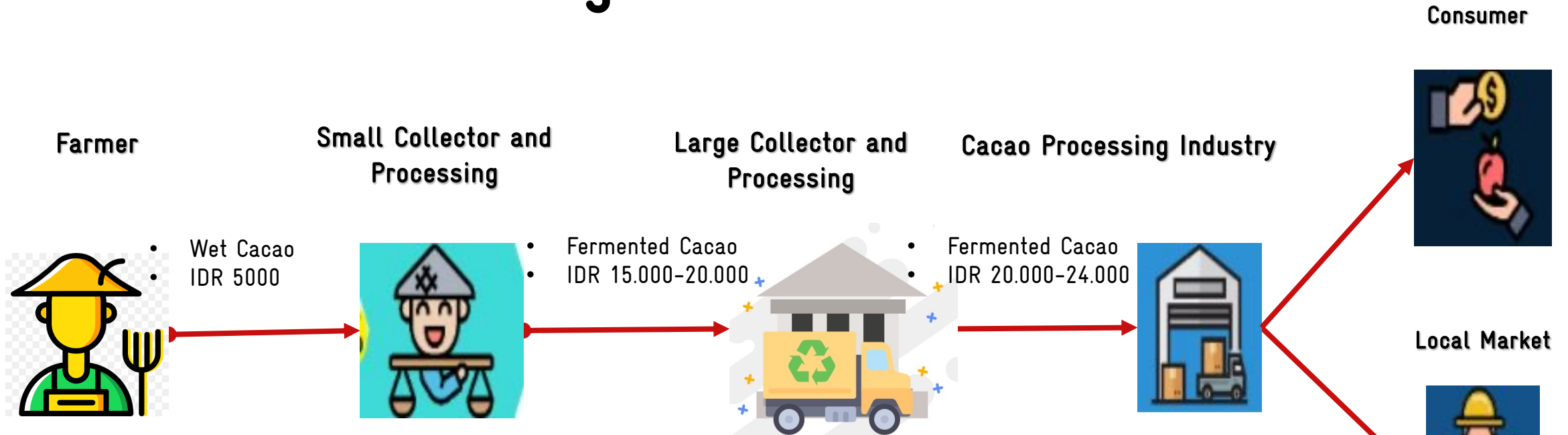
Problem	Main Cause	Service and required conditions	Area Intervention	Partners and Stakeholders
Low rubber farmer productivity	Suboptimal agricultural practices	Provision of Extension Services	Integrated approach to good agricultural practices, agroforestry practices, stakeholder partnerships, and enhancing the value-added of rubber products	Plantation Department GAPKINDO NGO Extension Services Farmer groups
	Low access to inputs	Access to agricultural inputs		BUMDES SAPRODI market
	Poor quality seedlings	Access to good quality seedlings		Plantation Department Ministry of Agriculture
Low selling prices	Weak bargaining position of independent farmers	Access to markets		Farmer Groups Cooperatives NGO
	Lack of added value from rubber products	Market access and group strengthening mentoring		Plantation Department Extension Services NGO Financial Institute

MARKET MAP OF KAKAO IN KAPUAS HULU



The identified market actors in the existing cocoa market within the study area are farmers, village-level cocoa collectors and processors, district-level cocoa collectors and processors, and cocoa processing factories supporting factors necessary for stakeholders along the cocoa value chain include quality seeds, fertilizers, agricultural inputs, advisory services, transportation, information and knowledge, financial institutions, distribution channels, warehouses, and ports

Cacao Marketing Channel I



- Independent cocoa farmers market their wet cocoa beans through district-level collector traders.
- Collector traders market the wet cocoa beans either through cooperatives or directly to cocoa processing factories, leveraging their direct orders from factories located outside the district

Business Case and Intervention in Cacao

Problem	Main Cause	Service and required conditions	Intervention Area	Partners and Stakeholders
Low cocoa productivity	Not too many farmers are cultivating cocoa	Access to information and knowledge about cocoa cultivation.	Enhancing awareness and understanding, adopting an integrated approach to improved agricultural practices, agroforestry techniques, and fostering partnerships among stakeholders	Plantation Department GAPKI NGO FFB Processing Factory Farmer groups
	Aged plants	Access to Agricultural Inputs		BUMDES SAPRODI market
	Farming practices that are not yet optimal	Provision of Extension Services		Plantation Department Large Palm Oil Plantations Ministry of Agriculture
Low selling prices for farmers	Limited sale access	Market access		Farmer Groups Cooperatives FFB Processing Factory

Intervention of Certain Project

Typology	Oil Palm	Rubber	Cacao
Organization	GIZ Sustainable Agricultural Supply Chain in Indonesia (Sasci), Solidaridad, WWF	GIZ Sustainable Agricultural Supply Chain in Indonesia (Sasci), PRCF, WWF	GIZ FORCLIME, WWF
Intervention	<ul style="list-style-type: none"> Developing of a Rural Area Development Plan (RPKP) for Oil Palm: legality and certification(district Government, 2020–now) Improve of oil palm Supply chain for independent smallholders (WWF, 2020–now) Assist of oil palm smallholders to accelerate ISPO and RSPO certification, legality documents (STD-B and SPPL) (GIZ SASCI, Solidaridad, 2021–now) 	<ul style="list-style-type: none"> Good Agriculture Practice and sustainable rubber processing (PRCF, GIZ SASCI, 2021–now) Improved rubber market access of smallholder farmer (GIZ SASCI, 2021–now) Good Agriculture Practice and sustainable rubber processing (WWF, 2022–2025) Assist, establishment and capacity strengthening of rubber farmer groups (WWF, 2022–2025) 	<ul style="list-style-type: none"> Forest rehabilitation through planting with agroforestry system (cacao based) (GIZ FORCLIME, 2013–2019) Green Village through the application of cocoa Agroforestry (WWF, 2022–2025)

Profitability of Commodity

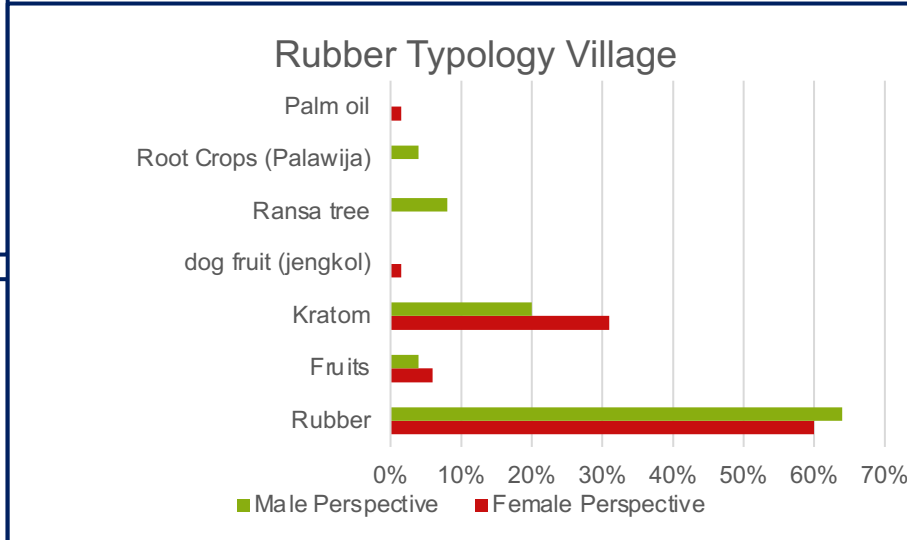
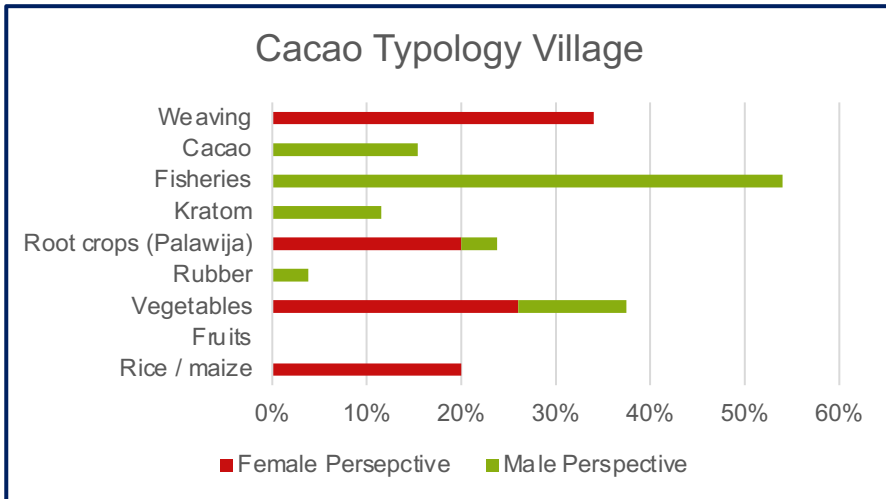
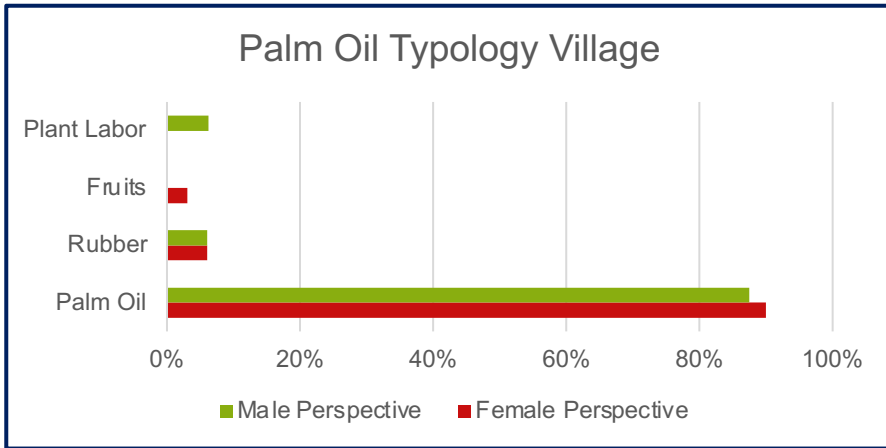
	Palm Oil	Rubber	Cocoa
Input Cost (Rp) per Hectare	2.074.000	689.000	2.772.000
Labor Cost (Rp) per Hectare	1,684,000	687.000	120.000
Tools (Rp) per Hectare	700.000	485.000	287.000
Total Cost per Hectare	4.458.000	1,861.000	3.179.000
Production per Hectare (Kg)	5,320	734	4.000
Price (Rp) per Kg	2.000	6.000	5.000
Income (Rp)	10,640,000	4,404,000	20.000.000
Profit (Rp)	6,182.000	2,543,000	16.821.000



Gender and Role of Women



Gender in Livelihood

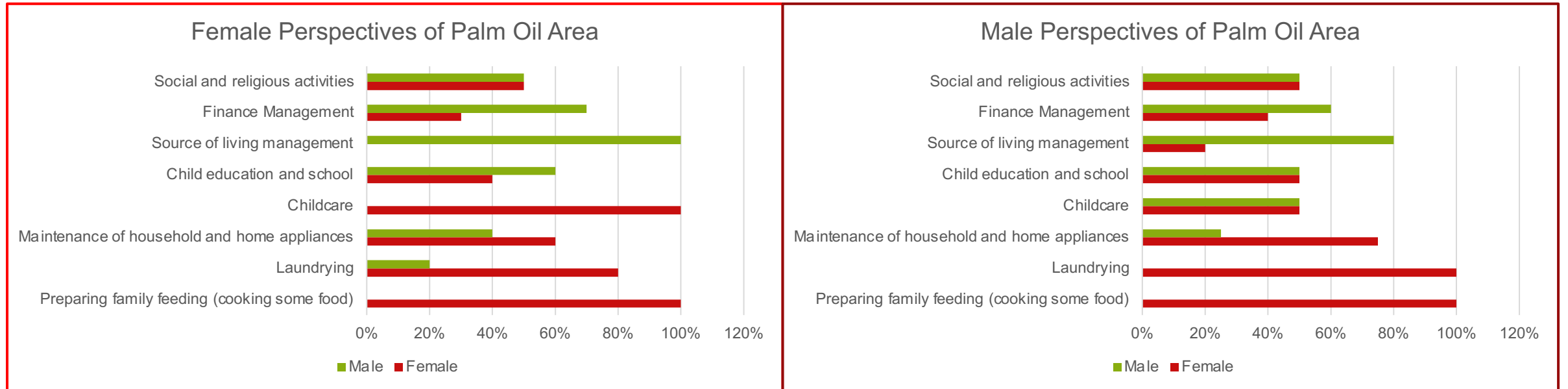


Palm oil Typology Village, there is a common perception between men and women who see and feel that palm oil commodities dominate as their main source of livelihood (about 90%)

Rubber Typology Village, both male and female farmers view rubber as their primary source (60%-70%) of livelihood, followed by kratom, and then various fruit plants

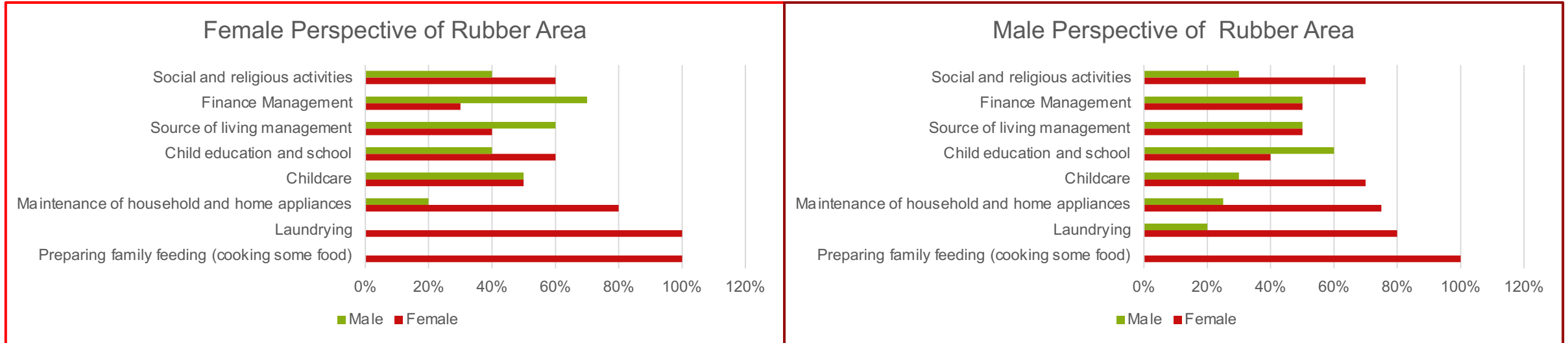
Cacao Typology Village, From the graph, it can be observed that from the perspective of women, their primary source of income comes from weaving crafts. On the other hand, men's perspectives reveal that their primary source of income comes from fishing. There is under 20% said that cacao as source of livelihood, this is because only very few farmers make cocoa a source of livelihood, even though there are some farmer who have cocoa plant but don't take care of them and don't reap the fruits.

Sharing role in the domestic activities between men and women in the palm oil households



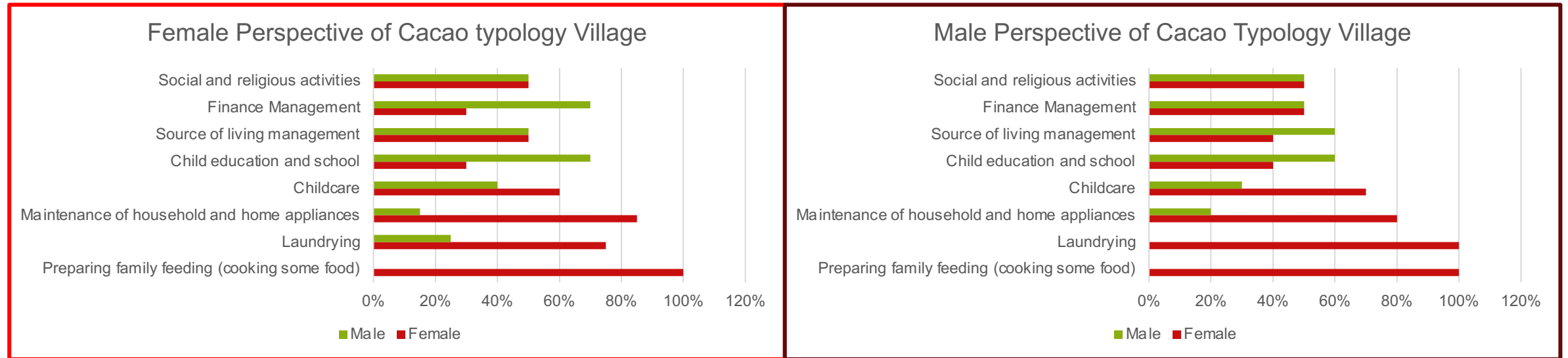
- From the infographic, it can be explained that both men and women perceive that domestic task such as preparing various meals and beverages, doing laundry, taking care of the household, and looking after children are predominantly undertaken by women. On the other hand, the management of livelihood resources, whether by men or women, is viewed as being predominantly carried out by men.

Sharing role in the domestic activities between men and women in the rubber households



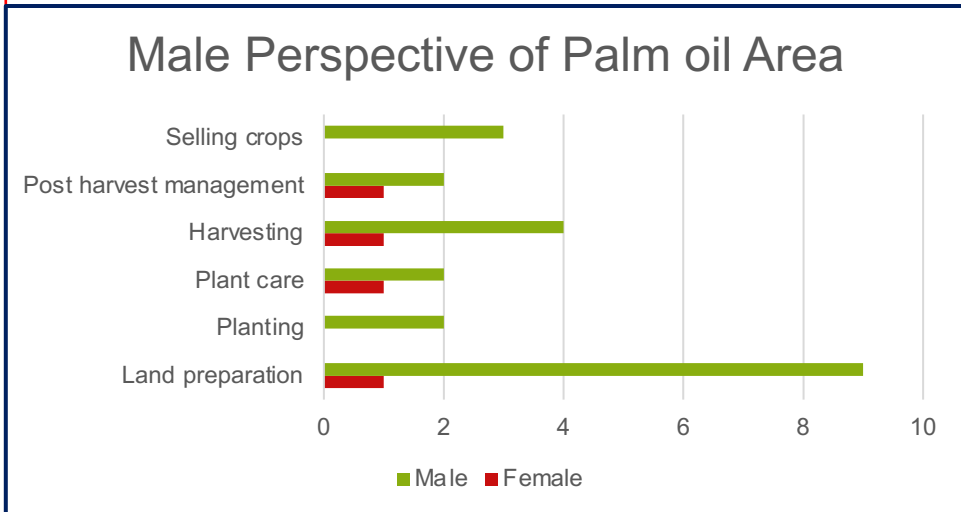
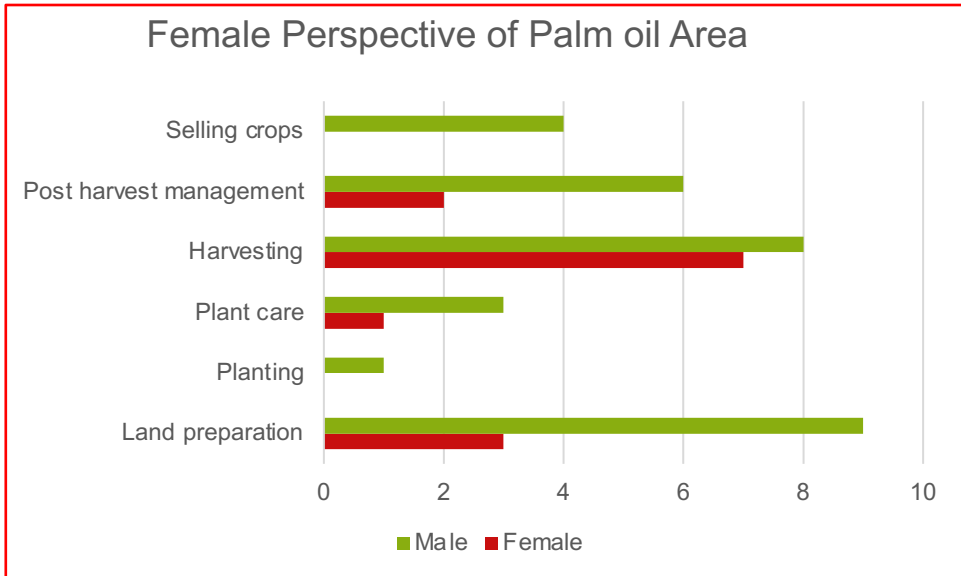
- Both men and women recognize that the preparation of family meals and beverages is predominantly the role of women. Women perceive clothing care as their full responsibility, while from the perspective of men, this task is not solely for women, as men sometimes assist their wives in doing so
- Regarding childcare, women believe it is done jointly with their male partners, but men tend to see childcare as primarily the responsibility of mothers (women) because men need to go out and earn a living
- In terms of managing livelihoods, men perceive it as a shared responsibility between men and women, and the same goes for financial management, according to men, but women feel they are given the role of managing finances for household needs, while decisions about the family's financial utilization are largely determined by men.
- For educating children, women perceive those men play a larger role, as men are responsible for financing their children's education. On the other hand, women play a more significant role in children's education issues since they are generally closer to the children

Sharing role in the domestic activities between men and women in the Cocoa households



- Men and women agree that when it comes to the kitchen (preparing various dishes and beverages for the family), this task is predominantly carried out by women.
- In terms of financial management, there are differing viewpoints between men and women. The male group sees financial management as a shared responsibility, while women perceive that financial control is mostly in the hands of men. Women are granted some freedom to use money for kitchen-related needs, but they often need permission from men for other expenses.
- Regarding the management of livelihood resources, men consider themselves dominant due to the lengthy journeys they undertake to fish in rivers and Lake Sentarum, as well as the labor-intensive preparation of fields for planting. Men perceive their work as carrying more risk and heavier responsibilities. On the other hand, women also perceive themselves as having a role in managing livelihood resources alongside their male partners. They engage in various economically valuable activities, including tending to fields and crafting high-value woven and woven goods.
- In terms of childcare, both men and women see women as more involved, but they both also acknowledge that men play a significant role in deciding about their children's education.

Gender role in the palm oil agricultural activities

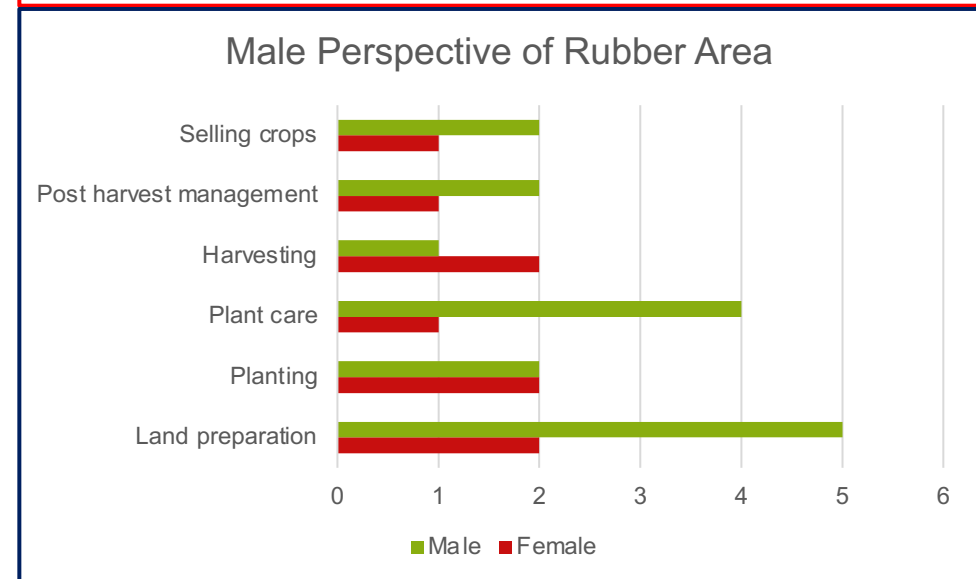
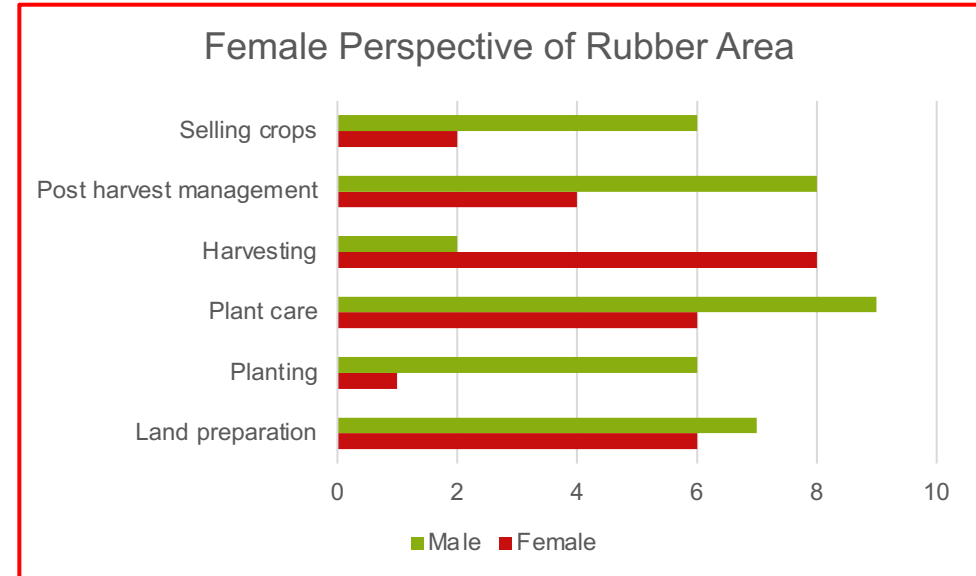


From the graph, it can be observed that both men and women share the same perspective that the palm oil commodity's various stages of work are mostly dominated by men

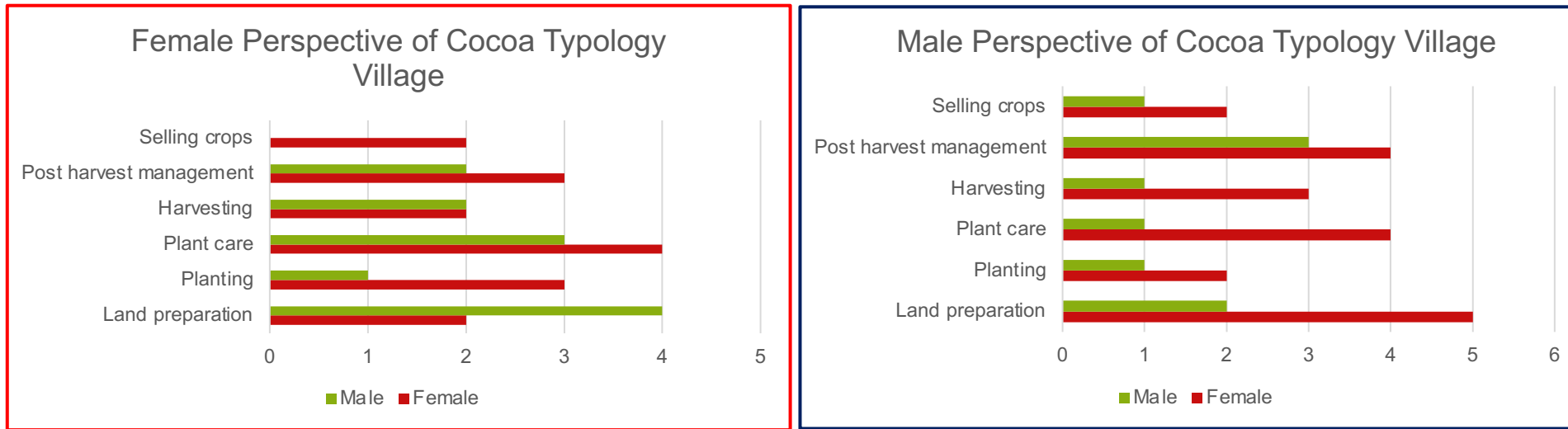
The contradictive perspective is on women involvement in the harvesting process

Gender role in the rubber agricultural activities

From the graph, it is evident that the perception of both men and women regarding the division of roles in agricultural activities shows that they both see more involvement of men in various stages of farming, except for planting. Men perceive that in planting activities, the roles of both men and women are equal

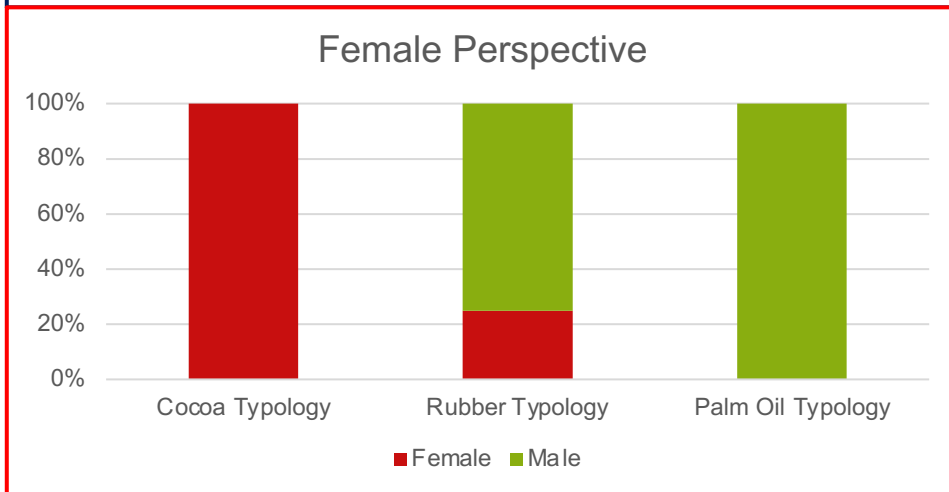
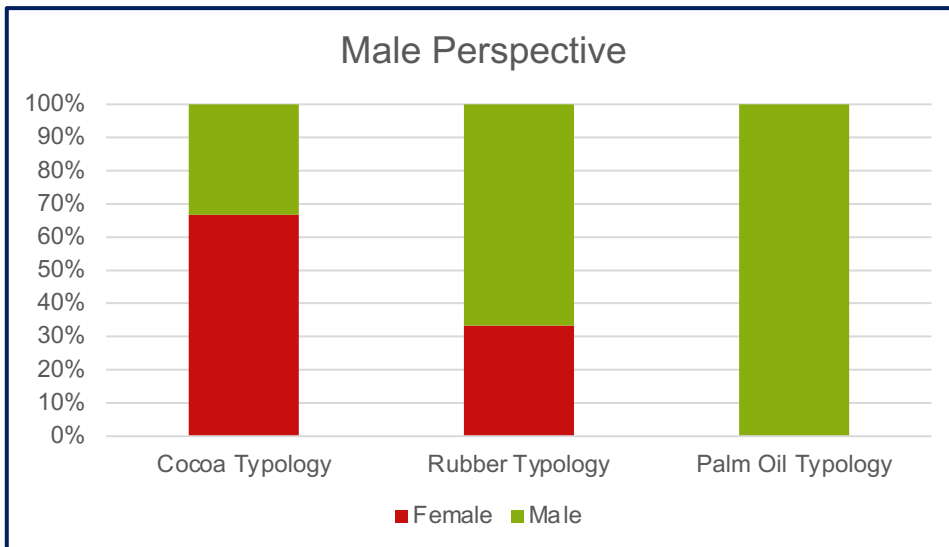


Gender role in cocoa typology agricultural activities



There is difference in perspective arises, because men often consider themselves as fishermen, spending less time at home to farm alongside their wives. Therefore, they acknowledge that farming activities are largely performed by their wives. On the other hand, women, who heavily rely on men for land preparation, observe that men play a significant role in preparing the land before planting

Gender in Agricultural Product Market



In those images, it can be seen that for the cocoa typology village, there is a slight difference in how men and women perceive their roles in the commodity market. Women see that there is significant involvement of women in the marketing of commodities, whereas men perceive that there is also a role for men in the commodity market. However, for the rubber and palm oil commodities, both men and women perceive those men play a more dominant role in the commodity market.

Gender in market chain of palm oil commodity

- Both men and women share the same perspective that the palm oil commodity's various stages of work are mostly dominated by men, based on the information we could say that palm oil is a masculine commodity.
- A long of market chain the commodity, start from farming in every stage of field work are mostly dominated by men, the middle trader – trader until board of cooperative which selling the fruits to palm oil factory, we found men in there.
- Financial services, input retail most of them dominated by men too
- Board of ICS also there is no woman there
- Three of palm oil industry we found, all a men
- We found a women in this chain only one, she is an extension officer at Sub District level

There is no woman involved actively in the palm oil chain, most of the chain actor dominated by men

Gender in market chain of rubber commodity

- Both men and women share the same perspective that the rubber commodity's various stages of work are mostly dominated by men, based on the information we could say that rubber is a masculine commodity.
- On farm in this commodity, there are women contribution in some field work of rubber, we found at planting, plant caring activity, also harvesting. Some women also taking role to sale wet rubber to grocery shop, to get some basic necessities such as rice and sugar
- Financial services like CU management team, input retail we meet some of women there
- Middle trader in village level until DO holder from factory some of them are men, but there were women as middle trader and accepting the sale of wet rubber to be replaced with groceries needed by rubber farmers family

Both men and women in this rubber chain commodity, having role according to their respective capacities, they play a role in the appropriate place

Gender in market chain of Cocoa commodity

- In the Cocoa commodity, women only take a limited role in farming stage, most of responsibility on cocoa farming dominated by men. Some women they take a role in plant maintenance such as fertilizing, cleaning the garden around the plant, and also on harvesting the fruits
- Woman also have responsibility in post harvest management like drying cocoa beans, some of them
- A men doing work that women cannot do, such as land preparation, pruning trees, treating pests and diseases, etc.
- Other chain actor like processors, middle trader, transportation, some of them dominated by men.
- There is a woman in cocoa factory management as a buyer of cocoa fermented beans

Both men and women in this cocoa chain commodity, having role according to their respective capacities, they play a role in the appropriate place



Gender and land Ownership

- Most of the land is owned through SKT (Surat Information Tanah), which is issued by the local village government
- Some lands do not have SKT but are managed traditionally through practices known as "tembawang" or "pemudak" (acknowledgment of land management rights based on customary law)
- The names on land certificates mostly align with the husband's name as the family head because these certificates are usually an evolution of the SKT status
- The representation of land ownership through SKT or land certificates is contingent on the history of ownership
- The dominant trend in ownership is still led by men as the heads of their households

Perception and Land Use

- The land use in the research areas is categorized into two types of commodities: the first is for food crops (referred to as *ladang*, and the activity is known as *berladang*), and the second is for plantation crops (referred to as *kebun*, and the activity is known as *berkebun*)
- When determining the type of crop to be planted, if it's a food crop, women are involved in the decision-making process (facilitated by men).
- However, if it involves plantation crops, the decisions are mostly dominated by men, although there is a small percentage of households that involve women, but this is very rare. Similarly, decisions regarding land and building use are mostly influenced by men



Discussion & Recommendations

- Age and education level data are important to observe from demography in order to determine strategy of intervention to be carried out. From the age of the respondent farmers only on the typology of palm oil where 70% are in the productive age of 25-45 years. Palm oil as a commodity is more attractive because it can provide better results than rubber and cocoa commodities, extra effort is needed in the typology of rubber and cocoa so that this cultivation is more attractive to the younger generation through motivational training with the application of interesting information media to carry out agricultural cultivation practices so that rubber and cocoa commodities can produce better production and results.
- From the level of education for all typologies of education levels, the average education level is only a junior high school graduate. In carrying out the intervention, it is necessary to pay attention to the media used which is conveyed in simpler language so that information and knowledge can be transfer appropriately.
- The traditional farming system for rubber commodities, shifting cultivation by planting field rice, and mixed agroforestry systems are important agricultural systems in Kapuas Hulu. investment in large palm oil plantations increases community adoption to cultivate palm oil which is considered more profitable. Ownership of land assets and vehicles as an indicator of non-monetary welfare shows that the condition of the oil palm respondents is better than the rubber and cocoa respondents.
- The origin of the farmer's land in the palm oil typology is more than 50% of the purchase in order to expand the planting area while in rubber and cocoa is more from inheritance.

Discussion & Recommendations

- Agriculture is the main livelihood of the respondents in all typologies. However, farmers have other livelihood options if the main livelihood is considered quite difficult to cultivate. Factors that influence the choice of livelihood options are the decline in the price of the main commodity, the influence of the success of other people working on other commodities, the profits obtained, and also occur because there is no choice or just to survive.
- Respondents in the palm oil typology use smartphones more to open the search application compared to the respondent farmers in other typologies. While in the other two typologies the use of smartphones is still quite small. This can have implications for digital application interventions that will be used later. In the palm oil typology the use of this application will be more acceptable, compared to other typologies. However, it is worth trying to develop both of these typologies
- Livelihood vulnerability can be seen from important current events that affect farmers' livelihoods. Important events they have experienced over the last 10 years, namely extreme rainfall, pest attacks, drought, fires, and floods. This perception was especially equated by respondents to the typology of rubber and cocoa, in contrast to the typology of palm oil farmers the respondents did not experience it. Not much can be done by farmers to overcome this problem, as well as the application of climate-resilient agriculture. Mixed cropping patterns have long been practiced by farmers in the typology of rubber and cocoa to diversify agricultural products as well as food security.
- In terms of income, villages in the typology with good access have a higher average annual income compared to villages in the typology with poor access. This means that the impact of commodity prices received by farmers on typologies with poor access is lower than those with good access. The high cost of transportation is one reason. The proportion of income from agriculture still dominates compared to non-agricultural income in all sample village typologies. Using the Indonesian poverty standard according to BPS of Rp. 535,547 per month, only respondents in the palm oil typology are above the poverty line, while respondents in the rubber and cocoa typologies are below the poverty line.

Discussion & Recommendations

- The marketing channel for palm oil plasma smallholders is effective and efficient because farmers can get a better price by producing good quality fresh fruit bunches after receiving technical assistance both from cooperatives and from nucleus palm oil plantation companies. Therefore, the same marketing channel model is expected to be adopted by independent smallholders by strengthening farmer groups and cooperatives. Interventions that can be carried out on palm oil commodities are integrated approaches to good agricultural practices and public private partnership.
- For rubber commodities, the marketing channel for assisted rubber farmers is efficient with technical guidance from a non-governmental organization, in this case GIZ, farmers can produce better rubber and get better prices because farmers get direct marketing access to factories through GIZ warehouses. This needs to be disseminated to other farmer groups for more equity and adoption. Agroforestry model with herb plants (*empon-empon*) such as ginger, turmeric and others can be planted between the rubber plants. the potential of the kratom plant, which is currently also of high interest in Kapuas Hulu, can be tested on a plot scale.
- Another intervention that may need to be tested for rubber commodities is adding the value of rubber products by assisting farmer groups to sell dry sheet rubber, this intervention requires intensive assistance and also requires access to cooperation with rubber processing factories to gain market access for selling dry sheet rubber. Interventions that can be carried out on rubber commodities are integrated approaches to good agricultural practices, agroforestry practices, public private partnership, and increasing the added value of rubber products.
- For cocoa commodity, it is necessary to develop an effective marketing channel by strengthening farmer institutions, technical assistance from both NGOs and cocoa processing factories, so that farmers can get market access and better prices. Application of a mixed planting design or agroforestry in addition to being a shade plant and a natural cocoa pest repellent. Agroforestry designs that are introduced to farmers can provide alternatives and income diversification. Interventions that can be carried out on cocoa are increasing awareness, integrated approaches to good agricultural practices, agroforestry practices, and public private partnership.

Discussion & Recommendations

- The results of the gender baseline study show that there are no significant gender gap between the roles of women and men in each village typology in the perception of the main livelihoods in each village. especially in the village for oil palm and rubber commodities, oil palm and rubber cultivation is the main livelihood, apart from that there are other identified sources of livelihood such as agricultural laborers, other garden products both from crops and fruits. for villages with a cocoa typology, from the perspective of both men and women it is stated that cocoa cultivation is not their main livelihood. According to them farming, gardening vegetables and crops, and fishing are the livelihoods that are currently carried out now.
- Women were more responsible in domestic and maintain the land that close to the settlement area, while men have more responsibility as income earner and in public domain. In term of land issues, the main problem face by the women is that they remain under acknowledge land holders.
- Role of women in land and farming system management is minor compared to the role of men in village with oil palm and rubber typology. Nevertheless, for aspects where activities are not physically demanding, women play major roles, e.g., in planting, maintenance, and post harvesting activities. While for the typology of cocoa, whose livelihood is dominated by growing vegetables, crops and upland paddy, the role of women is quite significant in all of their agricultural activities.
- In terms of market access, women play an important role in marketing products to villages with a cocoa typology. whereas in the typology of oil palm and rubber, men play an important role in marketing their products. Therefore, women position in the marketing aspect should be strengthen with knowledge on farm products quality and price information.



Discussion and Recommendation

- Recommendations from the results of this study regarding the target value in Kapuas Hulu seen from the indicators of the number of farmers, access to information and income. The number of palm oil and rubber farmers, each of which reaches 20 thousand households, is quite possible to meet the target value of this project, but it is necessary to be careful that the proportion of farmers in the cocoa commodity is currently quite small, and farmers' cultivation knowledge is still minimal. It is quite heavy to meet the target value for this typology. In addition, it is also necessary to consider the ease of applying digital devices in the typology of palm oil villages, the proportion of smartphone use is quite large, in contrast to the typology of rubber and cocoa, which still use smartphones a little. From the income side, for all typologies, including palm oil, cocoa and rubber, it is quite possible to target income increases with measurable programs.



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